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A Lecture
ON THE
MINOR SURGERY OF CHILDREN.

Delivered at the Hospital for Sick Children, Great Ormond-street, on Nov. 16th, 1922,

BY L. E. BARRINGTON-WARD, CH.M., F.R.C.S. EDIN., F.R.C.S. ENG.,
SURGEON TO THE HOSPITAL FOR SICK CHILDREN AND TO THE ROYAL NORTHERN HOSPITAL.

IN selecting a subject for my address I was influenced by the hope that a somewhat elementary discussion on the everyday practice of the out-patient department might be of greater value for an occasion than a more erudite disquisition on one of the rarer problems of the surgery of children. For every case of appendicitis, one sees many hundreds of diseased tonsils, and for every Rammstedt's operation, many hundreds of circumcisions. I make no apology for the apparent unimportance of my subject. In medicine the early stages of maladies are important, and the proper recognition and treatment of a minor malady may prevent the subsequent development of a major disorder.

In order to draw a line between major and minor surgery I have taken the division between in- and out-patient treatment customary at this hospital, and I hope to deal with some of the more common surgical problems and procedures which can be brought to a satisfactory conclusion in an out-patient department.

To ascertain the relative frequency and therefore, for our purpose, the relative importance of the different conditions, I have analysed the work of my department in the course of a year, and shall take the subjects in order of frequency. It will be necessary to invade the precincts of many special departments, but that, I fear, is inevitable. The general surgeon practising in the domain of the diseases of children has to be something of a general practitioner. It is impossible to look at a child in sections. Adenoids may be the cause of a valgus condition of the foot. Tonsils may produce abdominal symptoms. Systems are even more interdependent in the child than in the adult, and strict specialism is apt to lead to a narrow view.

TONSILS AND ADENOIDS.

This is quite the most common complaint at a children's hospital. Nearly one-third of all cases attending my out-patient department in a year were suffering from disease of the tonsils. You must not think that these numbers are to be attributed merely to enthusiasm on the part of the surgeon for a particular subject. In almost every case the patient had been referred to the hospital by a doctor or local authority. Sometimes it was a parent who had diagnosed the condition from previous family experience or the experience of neighbours.

There are two main types of affected tonsils—in one the tonsil is hypertrophied, in the other the tonsil is septic. This does not mean that the hypertrophied tonsil may not be septic, nor that the septic tonsil may not be hypertrophied; but it means that the essential part of the pathology in the one is enlargement and in the other sepsis.

(1) The *hypertrophied* tonsil is the more obvious. The tonsil projects between the pillars of the fauces and causes chronic obstruction of the air and food paths. Adenoids or hypertrophy of the naso-pharyngeal lymphoid tissue are usually present also. The deleterious effects of this hypertrophy is direct. The child becomes a mouth-breather, developing the typical facies. The nose is pinched, the maxilla is undeveloped and narrow, the eyelids droop, the chest is contracted with poor power of expansion, the shoulders are rounded, oxygenation is defective, and mental vitality is impaired.

(2) The *septic* tonsil is less obvious and perhaps more common. It may produce sore throats, although children will have recurrent attacks of tonsillitis without complaining of the throat. It is generally concealed by the predominance of the secondary results. The tonsils may be quite small and difficult to see, often merely a strip of infected lymphoid tissue lying between the pillars. The normal fissures of the tonsil are exaggerated, and on causing the patient to gag the fissures open up and display septic concretions. The tonsils may look red and ragged. This type of tonsil may produce general or local results.

(*a*) *General Results.*—The child suffers from toxæmia, shown by flabbiness of mind and body. Fatigue, inattention, irritability may be features. Muscles and ligaments are slack. The feet may show a tendency to become flat. A degree of pes valgus, due to lack of tone in the tibial muscles, develops. Spinal curvatures occur. Sometimes there is an alimentary toxæmia, shown by attacks of vomiting and abdominal pain. I have seen several cases diagnosed as appendicitis and sent to hospital for operation when the trouble has been septic (and on one occasion diphtheritic) tonsillitis. A child with septic tonsils is more liable to catch specific infections. There is reason to believe also that tonsils may be the portal of entry of the organism responsible for rheumatism (Poynton and Paine)

(*b*) *Local Results.*—(1) *Deafness* due to catarrh of the Eustachian tube; this deafness is frequently temporary but may at any time cause more permanent deafness by direct infection of the middle ear. (2) *Chronic otitis media*, leading to chronic otorrhœa, and also to mastoiditis. (3) *Glandular enlargements:* (i.) *Chronic simple adenitis.* In the majority of cases chronic sepsis of the tonsils is followed by chronic inflammation of the cervical lymphatic glands. The tonsillar gland (Wood) below the angle of the jaw is the first to be infected and from there the infection spreads along definite anatomical lines. (ii.) *Tuberculous adenitis* may arise primarily from a tuberculous tonsil, but it is more common to find the tuberculous infection superimposed on a chronic adenitis.

Adenoids.

Adenoid tissue is normally present in all children. Only when their enlargement or infection produces secondary effects do they become pathological and require treatment. It is practically never necessary to perform digital examination of the naso-pharynx to decide on their presence. If diagnosis cannot be made from an external examination and consideration of symptoms, then the adenoids do not require treatment. When tonsils are present and require surgical treatment it is advisable to remove the adenoids at the same time, whether they are much enlarged or not.

Adenoids alone sometimes require removal in the earliest periods of life. In some cases they are enlarged at birth, and obstruct nasal breathing to such an extent that the babe is unable to suck without attacks of partial asphyxia. Adenoids are also a common cause of acute retro-pharyngeal abscess. Later it is rare to find adenoids sufficiently enlarged or infected as to require removal without, at the same time, finding the tonsils pathological also. Hypertrophy of the adenoids is an expression of oral sepsis, and it is wiser to eradicate all sources at the time. In my experience adenoids are almost certain to grow again if infected tonsils and septic teeth, &c., are allowed to remain.

Treatment of Tonsils and Adenoids.

I will begin by stating what I believe to be the surgical indications for interference: (1) Recurring sore throats; (2) frequent colds, which begin with a tonsillar infection; (3) more than one attack of deafness or earache; (4) otitis media; (5) definite enlargement of the tonsillar lymphatic gland—mere palpability is not an indication; (6) obvious obstruction of breathing; (7) indirect effects, asthma, enuresis, recurrent vomiting attacks, recurrent attacks of abdominal pain, when (*a*) tonsils are infected, and (*b*) all other causes have been excluded.

Surgical Treatment.—The question is constantly asked "What are the uses of tonsils and adenoids?" I generally liken them to a carbon filter. There is a

circumoral ring of lymphoid tissue—adenoids, pharyngeal tonsil, lymphoid tissue of the tongue—these are useful as a filter as long as they are healthy. When once they are infected they are not likely to get clean again, and it is wiser to remove them.

Medical Treatment.—It is doubtful if medical treatment can have any really curative effect when once the tonsils and adenoids have become seriously infected. The tonsils have a poor blood-supply and, therefore, very little power of recovery from infection. In mild cases or in cases where operation is contra-indicated preventive measures can be undertaken. Painting the throat regularly with an iodine glycerine paint—iodine 6 gr., pot. iod. 12 gr., ol. menth. pip. 4 minims, glycerine 1 oz., is sometimes useful. I believe chlorine water to be the best gargle if the patient can be instructed in its performance. Spraying with a fine throat spray is the most efficient method, and a weak carbolic and peroxide of hydrogen lotion answers well. If local measures are impossible because of the age or temperament of the child, a mixture containing pot. chlor. and sod. salicyl. has a beneficial effect on the throat infection. Breathing exercises are advisable in all cases.

Operation.—If surgical treatment is to be attempted, it should be radical. The tonsil and lingual prolongation should be removed entirely. It is better to leave the tonsil alone than to slice off a part, leaving a large septic surface behind. The method I prefer is that introduced by Waugh. If certain essential precautions are taken, the operation can be made almost entirely devoid of risk, but it should not be undertaken lightly. It requires that expertness which can only be obtained by assiduous training in a clinic under a competent instructor. There is general agreement now that total removal should be the goal, but there is much difference of opinion as to whether this is to be obtained by blunt dissection or by the use of the guillotine. No doubt the reversed method of using the guillotine is a great improvement on the old guillotine operation, and, in the hands of the expert, removes the tonsil completely in most cases. I prefer Waugh's dissection method for the following reasons: 1. There is nothing haphazard about the removal; every stage is performed under full vision, and complete removal should be secured. 2. It is applicable to all types of tonsil at any age. 3. Hæmorrhage is less and is under complete control. The only disadvantages that I know are: (1) The anæsthesia has to be a little deeper; (2) the time taken is a little longer.

Preliminary Treatment.—Strong purgatives should not be given beforehand. Catharsis merely adds to the discomfort of the operation and reduces the resistance of the child by dehydration; 3½–4 hours before operation a light meal—e.g., rusk and milk and water, or toast and weak tea and milk should be given. The patient should be encouraged to eat sugar either in the form of ordinary loaf or as barley sugar the previous day, and the morning of the operation up to one hour before. I have never seen post-anæsthetic poisoning after this preparation. Atropine 1/200–1/100, depending on age, is given half an hour beforehand. Ether is the anæsthetic—administered first by the open method and continued when the mouth is opened by warmed ether given by bellows. Complete relaxation of the throat muscles is obtained and the swallowing reflex is abolished. It is impossible, even dangerous, to attempt this operation under light anæsthesia. A rolled towel or a sandbag is placed under the shoulders, so that the head falls somewhat backwards and the anterior nares are at a lower level than the opening of the larynx. Any blood which may collect will leave the nose before reaching the larynx. Denhard's gag (large modified) is inserted and the tongue held forward by a clip. The anæsthetist holds the tongue and jaw forward with one hand during the operation or an assistant can hold them. The operator, standing on the left side of the patient for the right tonsil, catches hold of the tonsil with Waugh's ring forceps and pulls it inwards. With fine-toothed dissecting forceps the anterior pillar is torn through just outside its reflexion on to the tonsil and the capsule of the tonsil is exposed. By blunt dissection, with the tonsil drawn inwards, the tonsil is shelled out of its bed, and the lingual piece is dissected off the tongue. No cutting is required, and the slight bleeding ceases at once with a little gauze pressure. The main vessel to the tonsil can easily be seen running into the upper and deep aspect of the tonsil and can be clamped with a forceps before division, if it is thought advisable. This makes the operation bloodless, but it is not a necessary step in children, because, if the dissection be made through strict anatomical lines, keeping close to the capsule of the tonsil throughout, bleeding is infinitesimal. The operator changes to the other side of the head for the opposite tonsil and removes it similarly. The naso-pharynx is then examined, and if adenoids are present a simple curette is passed behind the palate and with firm, but not too coarse, pressure is swept downwards in the middle line, bringing the adenoids out on the curette. Two further strokes will be necessary on either side to clear the posterior wall. Any adenoids on the side wall of the naso-pharynx should be left alone. Attempt at removal and subsequent scarring may affect the opening of the Eustachian tube. Bleeding from the naso-pharynx is sometimes profuse but ceases in a few moments. Slight pressure with gauze hastens its cessation. The gag and tongue forceps are removed and the child is turned on its side to allow any blood or vomit to run out of its mouth during recovery from the anæsthetic.

After-treatment.—In children under 3 no special after-treatment is required. They are confined to bed for three days. Spraying the mouth, gargle and mouth washes are generally impracticable and happily also unnecessary. If there is any febrile reaction, a mixture of pot. chlor., sod. sal., and sod. bic., will assist in cleansing the throat. Over the age of 3, spraying the throat with a weak carbolic and peroxide of hydrogen lotion hastens convalescence. Fluids are allowed on the first day so soon as the post-anæsthetic sickness wears off.

Complications.

1. *Hæmorrhage.*—If the operation is performed according to an exact technique and the tonsil is removed cleanly without damage to the pharyngeal walls, and if complete hæmostasis has been secured, as it should be, at the time of operation, reactionary hæmorrhage should not occur. I cannot remember a case out of many thousands of my own. I have seen cases but they have always been instances when a beginner has failed in the correct performance of the operation. Should post-operative hæmorrhage occur and be at all severe, a general anæsthetic should be administered at once, and the operation field examined. If the artery of supply is bleeding, it is caught with forceps and ligatured. If it is an ooze from the wounded bed, then deep mattress sutures of catgut are passed through both pillars of the fauces obliterating the dead space. I have known one or two cases of secondary hæmorrhage occurring at the end of a week at the time when the sloughs are separating. As a rule, secondary hæmorrhage is not serious and ceases of itself.

2. *Sepsis.*—If a throat is examined three or four days after operation, the inexperienced observer would be astonished at the apparent sepsis of the tonsil bed and the comparative health of the child. The patient seems to be very little affected by the rather alarming grey sloughs that are visible. Healing occurs rapidly, and at the end of ten days the process is complete. Sometimes, however, happily rarely, whether from the nature of the organisms or the low resistance of the child, healing is delayed and the patient suffers from septic absorption for two or three weeks, shown by a rise of temperature, listlessness, and anorexia. Active measures such as throat spraying must be instituted and relief speedily follows.

3. *Adenitis.*—It is surprising how rarely adenitis follows removal of the tonsils when the condition of the throat two or three days after operation is considered. It is more likely to occur when the glands

are already infected, but even then it is a very rare occurrence.

4. *Otitis.*—This must also be considered as a possible complication. It is quite rare and is commonly only a temporary lighting up of a previous aural infection.

To summarise, I can say that I know of no minor operation in surgery which can confer such benefit in properly selected cases with so little risk, but I would emphasise that the indications for its performance are precise, and that the performance itself demands skill and practice on the part of the operator.

CHRONIC ABSCESS OF THE NECK.

Chronic abscess of the neck is still a fairly common condition, forming 8 per cent. of the total number of out-patient cases. Year by year it is becoming much less frequent. This improvement is undoubtedly due to the modern organisation for the early detection and treatment in children of school age of such conditions as tonsils and adenoids, otorrhœa, impetigo, and scalp infections. Tuberculous cervical adenitis is a very large question and should not be considered in the light of minor surgery. Adequate treatment of tuberculous glands may demand as major an operation as any in surgery, and certainly requires a lecture to itself for discussion. I do not intend to speak now about tuberculous glands. Nevertheless, many abscesses of the neck in children who present themselves as out-patients can be treated successfully throughout in that department.

These abscesses result from broken-down glands. I think in the majority of cases the tubercle bacillus is the organism responsible, although staphylococci, streptococci, or pneumococci may be found in the pus. Generally, the abscess is bacteriologically sterile. As I have said before, if enlarged glands are present and the abscess is only a superficial complication, then the question merges into the larger one of tuberculous glands of the neck, and the child should be admitted into hospital for radical treatment. In the type of case to which I am referring there is no widespread involvement of glands, indeed, no gland can be palpated, and the only problem presented is the immediate treatment of a chronic abscess beneath the skin, with the skin perhaps already infected, and eruption imminent.

In the first place, look for the primary source of infection as you would in glandular infections in any other part of the body. As a rough guide it may be said that if the abscess is in front of the sterno-mastoid, the teeth, tonsils, lips, and face will be held suspect; if posteriorly, the external and meatus, the middle ear, the mastoid, and the scalp may provide a clue. Appropriate treatment is initiated. If the abscess is allowed to burst, or if it is only incised and drained, healing is delayed, suppuration continues, the skin becomes ulcerated, and the illness may be prolonged for months. Aspiration of these cases, in my experience, is tedious, uncertain, has to be repeated frequently, and may lead eventually to a discharging sinus.

It used to be my practice, an anæsthetic having been administered, to curette the abscess thoroughly with a sharp spoon, disinfect and close the wound. This was often followed by primary union and the cure of the abscess, but in many cases the abscess re-collected and required further treatment. There is, however, a greater disadvantage than mere failure to cure the abscess in this method. In two cases I have known tuberculous meningitis to follow this scraping, and I cannot but feel that there was a definite relationship between the operation and the incidence of meningitis. Dr. G. F. Still in his teaching is emphatic on this point.

I have found the most satisfactory way of dealing with these abscesses is to make a small puncture through healthy skin at the side of the abscess, empty it by gentle pressure, disinfect the cavity with pure carbolic acid, neutralise with spirit, and introduce a film of bismuth and iodoform and paraffin paste. It is not necessary to close the small incision. It heals rapidly under a daily dressing of "bipp" and leaves an insignificant scar. Splinting of the neck either by a poroplastic collar or by a simple wooden rectangular splint will hasten matters.

RETRO-PHARYNGEAL ABSCESS.

It is the acute variety that I wish to describe here. You will remember that a chronic retro-pharyngeal abscess may result from caries of the cervical spine, in which case the abscess lies between the bone and the prevertebral fascia, or it may arise from caseation and suppuration of the deeper glands of the neck, in which case the abscess lies between the prevertebral fascia and the pharynx and pushes inwards the side wall of the pharynx. In both of these cases the abscess is only a complication of the originating disease, and that disease fills the picture. The onset is insidious, and the symptoms or signs of cervical caries and tuberculous cervical adenitis will have been obvious for some time before the abscess discloses its presence. These abscesses will be approached from the neck, behind or in front of the sterno-mastoid, and will demand a major dissection and therefore do not further concern us now. The acute retro-pharyngeal abscess is quite different. It is due to a suppurative adenitis of certain glands which lie on either side of the mid-line between the pharynx and the prevertebral fascia, and which drain the tonsils and to a less extent the adenoid region of the pharynx.

The illness begins acutely. The child, usually under 3 years of age, becomes suddenly ill with fever, has difficulty in swallowing, and difficulty in breathing. The breathing is "croupy" and suggests diphtheritic laryngitis. With the mouth open in a good light and the tongue depressed the throat will be seen to be inflamed and œdematous. On the posterior wall, generally to one side of the mid-line, will be noticed a bulging swelling. Fluctuation is recognised by the palpating finger. There may be some recent glands on either side of the neck, tender on palpation; and in some cases there may be apparent fixation of the cervical vertebræ with or without a reflex torticollis. Movements of the neck are painful, but with gentleness they can be elicited, and you are not likely to mistake this rigidity for the fixed board-like rigidity of the neck in cervical caries. Operation must be undertaken at once. A light anæsthesia is induced. The child's shoulders are supported on a sandbag with the head thrown back. A gag is inserted and the tongue held forwards. With a short or guarded knife a longitudinal incision is made into the abscess throughout its extent and the pus is mopped up rapidly as it escapes. No special after-treatment is required beyond frequent spraying of the throat with a weak carbolic and hydrogen peroxide lotion. Recovery is rapid.

NÆVUS.

Six per cent. of all new cases suffer from nævus. Certain facts concerning nævi are of interest. The port-wine stain is excluded for the moment. They are usually not present at birth, but appear when the child is a few weeks old. Their initial growth is very rapid, but then they remain stationary for several years. It is very rare to see a nævus in the adult, and I believe that this is not due to successful treatment so much as to a natural disappearance. Nevertheless, it is essential to know how to treat them adequately, because parents will not submit to a disfigurement in their children which can be removed by surgical means, and if offered expectant treatment, will seek active help elsewhere. Moreover, the nævus may be in such a position that a slight increase in the size and invasion of a neighbouring part might increase the difficulties of treatment. The subjects of nævi are generally peculiarly strong, robust children.

Port-Wine Stain.—This differs from the other varieties in that it is often present at birth, shows no tendency to spontaneous disappearance, and is not amenable, in my experience, to any known method of treatment. CO_2 snow, electrolysis, electric cautery, X rays, radium seem to have no effect whatever. Excision followed by a plastic operation has been suggested to me by Dr. A. M. H. Gray as the only method of treatment in cases of moderate size.

Cutaneous Nævus.—It is customary in text-books to describe under this heading the port-wine staining. I think it is better to consider here that common type of nævus which consists of dilated capillaries, arterials and veins, slightly raised from the surface. It occupies the skin only, appears some weeks after birth, tends to spontaneous disappearance, and is eminently suitable for treatment. It is essentially an angioma or tumour of blood-vessels. It varies in size, but as a rule is quite small. It is most common on the face and trunk, and rarely affects large areas of skin in the same manner as the port-wine stain. CO_2 snow never fails to cure, although many applications may be necessary. The stick of CO_2 is readily made. The gas is allowed to escape from the cylinder into a square of chamois leather. It becomes snow-like at once and is packed into a brass tube of appropriate dimensions. With a hammer and a wooden ramrod it is compressed and finally driven out of the tube as a stick ready for use. Moderate pressure for 10–30 seconds will be sufficient, but the exact amount of pressure can only be learnt by practice. Too little would have no effect; too much would cause a deep ulcer. A shallow ulcer which heals under a scab within a fortnight should be the aim. It is impossible to cure a large nævus with one application. Different parts of the nævus should be dealt with at intervals to allow for healing. A soft, white, and eventually barely visible scar results. Excision is a quicker method of treatment if the nævus is situated on an unexposed part of the body.

Subcutaneous Nævus.—In this, the least common variety, a definite soft, expressible tumour is present in the subcutaneous tissues under the skin. It frequently presents problems of diagnosis. It is sometimes situated in the middle line simulating meningocele and spina bifida. It may be mistaken for a lipoma, dermoid or tuberculous abscess, and in the inguinal and femoral regions, for a hernia. The most satisfactory treatment is excision. If excision is contra-indicated, either for anatomical reasons or on æsthetic grounds, an attempt should be made to secure cicatrisation of the vascular tumour. If small, numerous punctures with the electric cautery at a dull-red heat will be sufficient. If large, the injection of boiling water will effect a cure. The technique is simple. An anæsthetic is necessary; thick rubber gloves must be worn to protect the hands. A glass syringe is taken from boiling water and an injection of 1–5 c.cm. of boiling water is made rapidly into the base of the tumour. The puncture is sealed with collodion. A good deal of local reaction follows and some œdema of the surrounding tissues appears in the next few days. No improvement can be expected for several weeks, but gradually fibrosis occurs and the tumour shrivels and becomes flat. I have known sloughing to occur only on one or two occasions, and never to cause anxiety. In very large nævi such as are met with on the scalp several injections at intervals of six weeks will be necessary. The results of this method of treatment are most satisfactory.

Mixed Nævi.—In this variety there is a subcutaneous tumour and the skin over it is also nævoid. It is fairly common on the scalp, and tends to affect also the mucous membranes—e.g., palate, tongue, vulva. The diagnosis is obvious. If excision is impracticable the treatment already described for the cutaneous and subcutaneous varieties will be combined. I prefer to treat first the cutaneous part with CO_2 and then later, under an anæsthetic, use the electric cautery or boiling water injection for the subcutaneous part of the tumour. There is a less common variety of nævus with which a lymphangioma is associated. It takes the form of numerous warty outgrowths of the skin over a wide area and the deeper tissues undergo a lymphangiomatous change. In one case which I am now treating, the right side of the face and neck was covered with multiple minute vascular papillæ. The substance of the cheek was thickened and occupied by a lymphangioma, and the mucous membrane of the mouth over a corresponding area was also covered with small fleshy vascular papillæ. After several attempts, under a general anæsthetic, I have now succeeded in destroying with the electric cautery the papillæ of the skin and mucous membrane and the cosmetic effect is good. Boiling water injection has been used in the cheek with some benefit, although the condition is not yet cured. The tendency to recurrence in this form of nævus is remarkable. On two occasions after a laborious séance, in which it appeared that every papilla had been thoroughly destroyed, a fresh outgrowth appeared within a fortnight. In the treatment of nævi I have not mentioned diathermy or radium, not because I do not realise their possible value, but because the necessary apparatus is difficult to obtain, and I have preferred to describe methods which may be inexpensively and universally applied with very good results.

UMBILICAL HERNIA.

The common umbilical hernia of children develops a few weeks or months after birth and is of the nature of a hernial protrusion through the scar tissue of the umbilical orifice. It usually begins through the upper part of the scar. The projection varies in size from that of a thimble to that of the thumb of a glove. It is associated with some cause of straining—e.g., phimosis, constipation, worms, excessive flatulence—and tends to spontaneous cure. I have never known of a case of strangulation; the general effects on the child's health, apart from the exciting cause, are probably nil. The mother is more disturbed than the child by the actual hernia.

Treatment.—In the first place any cause for straining must be sought for and treated. Locally reduction of the hernia and the application of broad straps of plaster approximating the recti will allow the fibrous ring to contract and the hernia to be obliterated. The plaster will require to be changed every fortnight for two or three months. Rubber belts are quite inefficient. I never operate unless the hernia is large and the child is over 3 years of age. In such a case the child is admitted to hospital and a radical operation performed. Subcutaneous ligature of the sac is unnecessary in infants and insufficient in older children.

HYDROCELE.

It has always appeared to me as curious that surgeons have delighted in giving names to hernia and hydrocele which are no guide to their development or their anatomical condition. Thus, an "infantile" hernia is usually met with in adults; a "congenital" hernia suggests that no other inguinal hernia is congenital. Similarly with hydrocele. The terms infantile and congenital do not accurately describe the types of hydrocele they are supposed to represent.

From the practical point of view there are three types of hydrocele in children:—

1. Hydrocele of the tunica vaginalis. This is comparable to the ordinary hydrocele of adults, except that the sac extends farther up the canal. The upper part only of the processus vaginalis is occluded. This is known usually as an infantile hydrocele, and is the commonest variety.

2. Hydrocele of a hernial sac or a potential hernial sac. In this the processus is patent throughout, and the fluid returns to the abdomen on posture or pressure. It is called a congenital hydrocele.

3. Hydrocele of the cord. The tunica vaginalis is developmentally completed and the funicular process is occluded at the upper end, but the intermediate part in the inguinal canal is distended with fluid.

The prognosis and treatment of the three varieties differ.

In (1) the process of obliteration of the processus which has already begun at the neck will probably proceed downwards, the fluid will be absorbed, and a cure result. Active treatment is not usually required. Tapping is not to be recommended. It will certainly have to be repeated and merely seems to delay the natural cure. The mother is frequently convinced that this disability is exceedingly painful and is the cause of every ailment that the child may be suffering. I only operate if the swelling has been present for six months and shows no sign of improvement.

(2) is in a different category. It is often difficult to decide if the abdominal contents have not or will not at some time descend into the patent processus. There is less tendency to spontaneous cure in this variety, and it is best to treat the patient as if a hernia was definitely present. Operation for the removal of the sac is therefore indicated.

(3) Hydrocele of the cord usually undergoes a natural cure. Operation is advisable if no improvement is noted over a reasonable period.

PHIMOSIS.

Circumcision is, I suppose, the simplest and the most commonly performed operation, but observation teaches us that it is not always performed as it should be, nor are the indications for its performance always properly understood. The direct indication for circumcision is when the act of micturition is interfered with by the excessive length of the prepuce and the tightness of its orifice. A long prepuce which can be drawn back readily to the corona does not in all cases require to be removed, although, if in doubt, it must be remembered that venereal disease and carcinoma are more liable to develop in later life even with a slight degree of phimosis. In severe cases micturition is obstructed to such an extent that dilatation of the bladder and even hydronephrosis may develop. In milder cases the effort of straining determines the onset of umbilical and inguinal hernia and rectal prolapse. Balanitis is an additional complication and may lead to infection of the inguinal glands.

Circumcision is often performed on more indirect grounds. I have seen many cases of marasmic babies with definite phimosis greatly benefited by the operation. Vomiting simulating pyloric stenosis may be due reflexly to phimosis. I have frequently performed circumcision for convulsions, enuresis, and masturbation, with benefit to the general health of the patient but without benefiting, to my knowledge, the special malady to which the operation was directed. I do not think the Jewish method of circumcision has anything to commend it. The withholding of anæsthesia seems to me a relic of barbarity. The technique does not appeal to the surgeon. In most cases too much skin is removed. The aim of the operator should be to leave sufficient prepuce to cover one-third of the glans and yet allow free retraction to the corona.

The usual operation I perform is as follows: Open ether is administered. The orifice of the prepuce is dilated with sinus forceps and the prepuce retracted to the corona. All adhesions are separated and the smegma is wiped away. The prepuce is allowed to come forward again. It is not pulled forward beyond its normal level. A clamp is placed across the prepuce, the prepuce is cut across in the groove left by the clamp. The frænum escapes. The skin retracts slightly; a tube of mucous membrane remains on the glans. The mucous membrane is slit up the dorsum and the incision is carried for one-eighth of an inch into the skin across the corona, making the complete incision somewhat racket-shaped. Four vessels are sought for; they are fairly constant in position, two anteriorly and two laterally, and they are tied with fine catgut. Hæmostasis should be certain. Hæmorrhage after circumcision is quite common and I have seen two children this year labelled as hæmophiliacs by their doctors and warned against future operations because they bled after circumcision. In neither case were there any grounds for this diagnosis. The skin is united to mucous membrane with four or six fine catgut stitches. A piece of gauze is laid over and another under the penis and the parent or nurse is instructed to apply fresh gauze when wet. Common faults are: 1. Removal of too much skin. The glans and sensitive corona are left completely bare and protection which Nature intended is destroyed. Constant irritation of the penis results. 2. Removal of too little skin. Contraction follows. A hard fibrous ring forms in front of the glans which by contraction forces the penis back into the scrotum. Sometimes in these cases the penis is so buried in the scrotum as to be almost invisible. 3. The frænum has been divided and ligatured coarsely. The result is an ugly projection of tissue in the neighbourhood of the frænum which eventually disappears. It remains, however, raw for some weeks at the time of operation and delays healing.

It is very necessary to make a careful examination of the meatus. A congenitally small meatus occurs frequently. I have seen many cases of circumcision quite unrelieved of their symptoms because the pin-point nature of the urethral opening had been overlooked. Dilatation or simple incision is insufficient and relapse is certain to follow.

A simple operation which I first saw performed by Mr. T. H. Kellock will effect a permanent cure. An unabsorbable stitch is passed through the meatus and out through the floor of the urethra one-eighth of an inch posteriorly, but is not tied. With sharp-pointed scissors the meatus is enlarged ventrally almost to, but not quite reaching, the stitch. The stitch is then tied round the bridge of tissue left and allowed to cut its way out. By the time the stitch has cut out, mucous membrane will have grown down and covered the raw area and the opening is permanently enlarged. It may be advisable to pass a glass rod with a sterile lubricant into the new meatus once or twice a week for two or three weeks after operation to make absolutely sure that contraction will not take place.

PROLAPSE OF THE RECTUM.

Prolapse of the rectum occurs most frequently between the ages of 6 months and 4 years. It is predisposed to by laxity of the levator ani and sphincter muscles and by loss of the ischio-rectal fat. The exciting causes are phimosis, diarrhœa, rectal polypus, worms, constipation, and the habit some mothers have of leaving the child sitting for long periods, straining at stool. Two degrees are generally described: (1) a ring of mucous membrane only is protruded; (2) all the coats take part in the protrusion.

The diagnosis is simple. The only possible condition for which it could be mistaken is intussusception. In cases of extreme mobility of the colon the intussusceptum can travel sometimes as far as the anus without producing the graver features of intussusception. Examination with the gloved finger will demonstrate that the projection in prolapse is only the lower bowel and that mucous membrane and skin are continuous.

In the first degree attention to the exciting cause will effect a cure speedily. In the second degree the cause should be sought for and appropriately dealt with. The mother or nurse should be instructed how to reduce the prolapse. If the child is old enough, the knee-elbow position should be used. In smaller children gentle sustained pressure with the child lying on its side will be sufficient. After reduction, bathing the parts alternately with hot and cold water braces up the pelvic muscles. Strapping of the buttocks is not generally necessary. Small doses (1 dr. t.d.s.) of liquid paraffin should be given. The act of defæcation should be performed with the child lying on its side. In stubborn cases an injection of 3 or 4 oz. of the infusion of quassia after defæcation is of value. Such minor measures, if properly performed, will cure nearly every case of rectal prolapse. I have only had to operate once, and in that case linear cauterisation of the rectal mucous membrane was successful.

RECTAL POLYPUS.

Bleeding from the rectum in a child otherwise perfectly well is almost pathognomonic of a rectal polypus. Hæmorrhoids do occur but are exceedingly rare. Rectal polypus is usually single, but may be multiple. It may be sessile, but by the time the condition is noticed it has usually become pedunculated by traction. The symptoms are (1) bleeding, or (2) bleeding and passage of mucus. Tenesmus is not often noted. Sooner or later the polypus is extruded with defæcation and becomes obvious even to the mother.

Treatment is simple. An anæsthetic is given and the rectum carefully examined with a short proctoscope to see the situation, size, and number. The instrument is withdrawn. It is not necessary to do more than very slightly dilate the sphincter. The finger is

introduced and hooked on to the pedicle and the polypus is withdrawn from the anus. A catgut ligature on a needle is passed through the mucous membrane at the base of the pedicle and tied and the polypus is cut away. A little vaseline is injected into the rectum from a collapsible tube. Small polypi are very friable and are easily torn away from their pedicle. Should this accident occur the proctoscope should be inserted again and the pedicle should be seized and ligatured, although serious hæmorrhage need not be expected, if, as is sometimes the case, the origin of the polypus cannot be seen.

ANAL FISSURE.

This is more frequent in small children than is generally supposed. It occurs in the constipated child. The mother notices that the child is apprehensive of anything connected with defæcation and screams during the act. The habitual constipation becomes more pronounced. In one case under my care suffering from abdominal distension and vomiting a diagnosis of obstruction had been made. The obstruction was relieved by dealing with the fissure. On examination of the anus the sphincter will be found in state of spasm. Under an anæsthetic a small longitudinal tear of the anal mucous membrane can be seen in the infant. The treatment is to dilate the sphincter—the passage of the well-lubricated index finger is generally sufficient. General measures must be adopted to relieve the constipation. Liquid paraffin is a useful adjuvant.

In conclusion, I am conscious that I have by no means exhausted the problems and possibilities of minor surgery. My excuse for discussing some rather elementary conditions dealt with a little haphazardly must be that these were just the subjects of which I knew very little when I first began work in the out-patient department of a children's hospital.

THE HISTOGENESIS OF MYELOID SARCOMA,

WITH A CRITICISM OF THE "CHRONIC HÆMORRHAGIC OSTEOMYELITIS" THEORY.*

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MYELOID sarcoma (myeloma, sarcome à myéloplaxes) is one of the best recognised and most sharply defined of clinical and pathological entities. Its anatomical characters, both gross and microscopic, are, in the great majority of instances, clean-cut and unmistakable, and at the present time there is almost complete unanimity of opinion as to the clinical behaviour and appropriate treatment of the lesion. Until quite recently its neoplastic nature had not been questioned, and such differences of opinion as existed were concerned mainly with the exact grade of malignancy possessed by the tumour, and in a lower sphere with the precise terminology to be employed. In 1913, however, Barrie,[2] of New York, published a paper in which he proposed to remove this condition from the group of neoplasms, and to place it in the category of the chronic inflammatory lesions or granulomata. In subsequent papers this author has elaborated his views on the subject, but apparently they have failed to find much acceptance.

Now, although the clinical and pathological characters of myeloid sarcoma are, as stated, well known, and the subject of very general agreement, there is almost no tumour whose histogenesis is so obscure. Histologically it consists of a polymorphous cell ground-work, usually preponderatingly spindle-celled, with varying (usually large) numbers of multinucleated giant-cells scattered more or less uniformly throughout it. The relation of these two cells to one another is still uncertain. In some specimens the microscopic appearances certainly suggest that the giant-cells arise from the other cells, either by fusion or by amitotic nuclear division, or both. It is very prone to hæmorrhage, necrosis, and pseudocystic change, and in places it may show the formation of areas of adult fibrous tissue. It never forms bone, although small bony lamellæ may be included at the margin, derived either from subjacent or from surrounding osseous tissue. It does not even contain visible deposits of lime salts, at least in the living portions of the growth, and there is nothing to suggest that the giant-cells are "brought together as a result of the stimulus offered by disintegrating bone structure" (Barrie,[3] see later). The giant-cells are, in fact, quite as numerous at the growing margin of tumours which have completely escaped from their bony capsule and are actively invading the surrounding soft parts.

Nature and Origin of the Polymorphous Cell Tissue and Giant-Cells.

We are thus faced with the double problem of the nature and origin (1) of the polymorphous cell tissue, and (2) of the giant-cells. The former is almost certainly fibroblastic in nature. In the older parts of the tumour, and especially in the more slowly-growing examples, it is always preponderatingly spindle-celled, and quite usually goes on to the formation here and there of fully developed fibrous tissue. The more cellular areas approximate more or less to the structure of polymorphous-cell sarcoma, and in many quite typical "myeloids" mitotic figures are present in abundance. The giant-cells correspond very closely in their microscopic characters to the osteoclasts of normal bone, and there seems no reason to doubt that they are just as essential and specific a constituent of the tumour as the latter cells are of bone. They possess numerous small, uniform nuclei, which tend to be grouped in the centre of the cell and are often arranged in a definitely whorled manner. They show only the most superficial resemblance to the megakaryocytes or bone-marrow giant-cells, which are clearly differentiated by the fact that they possess a single, albeit a much convoluted or even basket-shaped nucleus.

Normal Constituents of Bone and Marrow.

It will be well at this point, before further discussion of the pathological aspects of the question, to consider briefly the normal constituents of bone and marrow respectively; and here I think cognisance should be taken of function, in so far as it is known, as well as of minute anatomy. Now the specific cells of the bone-marrow are (1) the granular leucocyte series, (2) the erythrocyte series, and (3) the megakaryocytes, all of which, more or less intermingled, are supported by a loose fibrous tissue stroma, with or without adipose tissue cells. The bone consists, in the first place, of the osseous tissue proper, which includes bone-cells, calcified matrix, osteoblasts, and osteoclasts. These are enclosed in a sheath of fibrous tissue, the most obvious and complete portion of which is the periosteum. The inner aspect of the bone, however, is also covered by a thinner and more delicate layer of fibrous tissue, the endosteum, which not merely lines the main medullary cavity itself but also clothes all the little bony lamellæ of the cancellous tissue.

One of the most controversial subjects in connexion with bone, and the one which governs the situation so far as myeloid sarcoma is concerned, is the nature and position of the osteoclast or so-called polykaryocyte. Is it to be regarded as a bone-cell or as a marrow-cell, and what is its relation, if any, to the osteoblast? Here, the text-books of normal histology are not very illuminating. Most of them state, or imply, that it is a marrow-cell, and some apparently regard it as closely allied to, if not a mere modification of, the mononuclear megakaryocyte of that tissue. Kolliker (1886–89),[10] on the other hand, believed that the osteoclast and osteoblast were closely related, that

* Communicated to the Pathological Society of Great Britain and Ireland, January, 1922.

in fact the same cell might assume now the one form (and function) and now the other. My own histological observations have assured me that the osteoclast is met with only in relation to bone, and that it does not occur throughout the marrow generally. Its normal position is within the bony tissue, or at least between the bone and its peri- or endosteum.

The megakaryocytes, on the other hand, are widely distributed throughout the marrow, and show no tendency to congregate near bone. Moreover, they are met with, under pathological conditions, in situations where no bone is present, as in the spleen in some cases of myelogenous leukæmia. Transition forms between osteoclasts and megakaryocytes do not occur. As the osteoclast, under normal conditions, is thus invariably related to bone, and since its physiological activities in relation to that tissue are clear, it seems reasonable to regard it as a constituent of the bone rather than of the marrow.

The origin of the cell is still less certain. Jackson,[8] Carnegie Dickson,[9] and others think it probably arises from the reticulum of the marrow, Kolliker,[10] as stated, from the osteoblast. Jordan,[9] who has made a very careful study of this subject, believes it may arise in either of those ways, but especially the former. He says:—

> "The osteoclast arises chiefly (at first exclusively) from the marrow reticulum by a fusion process . . . . in the earliest stages the nuclei may multiply slightly by mitosis; their increase, however, is mainly due to exogenous additions, either reticular, osteoblastic, or even bone-cells. Smaller osteoclasts may fuse to form larger syncytia. . . . . Osteoclastic differentiation, beyond the very earliest stages, is an irreversible process. . . . . Osteoclasts may arise to some extent also from fusing osteoblasts. . . ."

I wish to advance the view that the osteoclast should be regarded as a true bone cell, arising from the fibrous reticulum or supporting fibrous-tissue framework of the bone, periosteum, or endosteum as the case may be, rather than the reticulum of the marrow. That is to say, reticulum which is in process of forming osteoclasts should be regarded as already differentiated, to a considerable extent, as bone reticulum, while the osteoclast itself, although not osteogenic, is a specific bone cell, an end-product cell with a definite and specialised function in relation to osseous tissue. In this view, myeloid sarcoma is a specific tumour of the fibrous framework of the bone in which the formation of fully developed osteoclast-like giant-cells is continually going on. The differences between these "myeloid" giant-cells and normal osteoclasts, increased size, increased number of nuclei, &c., are merely such as are commonly associated with conditions of neoplasia. The embryonic, polymorphous-cell matrix of a myeloid sarcoma thus resembles the sarcomatous part of a fibrosarcoma, but, unlike the latter, the cells may develop in either of two directions, into ordinary fibrous tissue or into osteoclasts. In either case such development indicates approximation to the adult type of structure, and as it is a notable feature of these tumours, is no doubt to be associated with their known low-grade malignancy.

Nomenclature of the Tumour.

How, then, should this tumour be labelled? Since none of its constituent cells are derived from specific bone-marrow cells the name "myeloma" is inaccurate and should be dropped. It has the further disadvantage that its use may cause confusion with the entirely different disease, multiple myeloma. The name "myeloid sarcoma" was introduced by Sir James Paget[12] nearly 70 years ago, on account of the naked-eye resemblance of the tumour to red marrow. It is a term which, while justifiably vague, is thoroughly well understood by surgeons and pathologists in these islands at least, and this is more than can be said for any of the suggested synonyms. It will be time enough to introduce a new name when the true nature and histogenesis of the tumour have been fully elucidated. *Osteoclast sarcoma* would be the obvious title arising out of the hypothesis above set forth.

The use of the term "sarcoma" has been strongly objected to, mainly on the ground that the tumour never undergoes metastasis. Yet metastasis is only one, although admittedly a most important, criterion of malignancy, and myeloid sarcoma possesses not only the faculty for continuous, unrestrained growth, but also definitely invasive and locally destructive characteristics.† The use of the term "giant-cell sarcoma" or "giant-cell tumour," so much in favour with American writers is, in my opinion, to be deprecated, inasmuch as it fails to make a distinction between myeloid sarcoma on the one hand and frankly malignant giant-cell sarcoma on the other. This is a point which I have elaborated in a former paper,[13] and is one of great practical importance. The qualification of the term by such adjectives as medullary or myelogenous certainly makes for precision, but there are obvious objections to both. "Medullary" giant-cell sarcoma would exclude the commonest form of myeloid sarcoma, the subperiosteal variety met with in the jaw, myeloid epulis; while "myelogenous" has the same fault as myeloma, it assumes a marrow and not a bony origin. Recently the term "giant-cell sarcoma of epulis type" has been introduced and is certainly preferable to most of the above. "Epulis," however, is merely a term for an outgrowth from the alveolar margin, not necessarily one of "myeloid" type.

"Chronic Hæmorrhagic Osteomyelitis."

Barrie and his associates [2 3 4 5 7] regard the lesion under review as a chronic, hæmorrhagic, non-suppurative osteomyelitis, probably of traumatic origin, and in no way related to neoplasm. They consider that the histological structure is indistinguishable from that of a hæmorrhagic granulation tissue, and that the giant-cells, of endothelial origin, are scavengers formed for the purpose of absorbing and removing the detritus resulting from bone destruction. They say [5]:—

> "The histopathology . . . . exhibits a heterogeneous cellular picture, consisting of fibroblasts, endothelial and polynuclear leucocytes, lymphocytes, eosinophils, and foreign-body multi-nucleated scavenger cells."

They believe, moreover, that the lesions benign bone cyst and osteitis fibrosa are merely the end-results of this process; in other words, that "chronic hæmorrhagic osteomyelitis" progresses by a process of "metaplasia" into the condition of "chronic fibrocystic osteomyelitis." Some of their remarks [3] clearly imply a belief in the possibility of spontaneous cure, apparently in the majority of cases—e.g., they say that, following the initial trauma:—

> "Immediate effort at repair begins with the formation of primitive, hæmorrhagic granulation tissue, with metaplasia, resorption, regeneration, and restoration of architectural arrangement of structures and function, and the lesion is cured, or rarely becomes chronic. . . . The chronic lesion may remain hæmorrhagic in form, or later assume fibrocystic changes."

That this marked divergence of opinion of the two schools, neoplastic and inflammatory, is of more than academic interest is made very clear when one reads the conclusions of these latter authors with regard to treatment. Barrie [2] states:—

> "The treatment generally of chronic (non-suppurative) hæmorrhagic osteomyelitis should be operative, the operation including only the removal of unhealthy and excessive granulation tissue and inflammatory debris. . . . The early treatment by fixation in plaster-of-Paris dressing may be effective, the part being put at absolute rest. . . ."

This, to my mind, is quite mischievous teaching, since only very thorough local removal will prevent recur-

† In the discussion which followed the making of this communication, Dr. Archibald Leitch mentioned that he had seen a genuine case of myeloid sarcoma with metastases. The structure of the secondary deposits was similar to that of the primary growth, and included typical, osteoclast-like giant cells. This case affords strong confirmation of some of the views expressed in this paper, notably (1) that the tumour is essentially a sarcoma, albeit of only local malignancy in the great majority of cases, and (2) that the giant cells are not fortuitous, but a constant and integral part of the growth.

rence in a genuine case. No doubt many cases have been cured by simple curettage, but it must be a most thorough and painstaking operation, otherwise recurrence is very likely to ensue. Even partial resection of the affected bone may fail to effect a cure, as in the following case lately under the care of Mr. Harold Collinson in the Leeds General Infirmary.

The patient was a woman of 39. In December, 1915, she had the lower end of the radius resected by Mr. Lawford Knaggs for a typical myeloid sarcoma about the size of a pigeon's egg. This had been causing symptoms for four months, following a "sprain" of the wrist. A graft from the tibia was inserted. Six years later, in November, 1921, she returned with an extensive recurrence in situ, which had caused destruction not only of the greater part of the graft, but of almost the whole carpus as well. These points were clearly brought out in a radiograph. The hand, which was quite useless, was amputated well above the wrist, and on dissection of the specimen one found that the tumour was infiltrating the soft parts in many directions. The muscles of the thenar and hypothenar eminences were extensively invaded, and small purple nodules of growth were sprouting out from between the extensor tendons, some of which were actually completely embedded in the mass. The naked-eye appearances were, in fact, clearly those of a neoplasm, and one possessing markedly infiltrative powers. Histologically the recurrent growth, like the primary, was a typical myeloid sarcoma, with very numerous "myeloid" giant-cells throughout. At the margin it showed well-marked infiltration of the surrounding muscles and soft parts generally.

The futility of inadequate curettage is well illustrated by a case recorded by Haussling and Martland,[7] two American observers who seem inclined to favour Barrie's hypothesis. In this case local recurrence following curettage occurred five times within five years. At the sixth operation it is stated that the tissue filling the bone cavity was no longer red and jelly-like as on former occasions, but consisted of several cystic compartments containing clear fluid. On the strength of this observation it is concluded that "the findings at the last operation would seem to verify" Barrie's contention that fibrocystic disease of bone is the later stage of chronic hæmorrhagic osteomyelitis. At the time of writing only three months had elapsed since that operation.

This is on a par with the slenderness of the data on which most of Barrie's conclusions are based. In his first paper [2] he cites three cases, only one of which was submitted to microscopic examination. In this case the pathologist reported that "in the search of a relatively large number of slides, a few well-defined giant-cells were found containing 8 to 12 nuclei." In the second case the affected limb was treated by being put up for a time in plaster-of-Paris, after which it was "considered clinically cured." No X ray was taken. In the third case, with 13 years' history, the X ray showed slight enlargement of the internal malleolus and adjacent part of the tibia. At operation the bone was cut into, and soft greyish material scraped out. It was not submitted to histological examination. The patient was "well" three months later. Barrie concludes:—

> "These three cases are very instructive inasmuch as they illustrate the early and late pictures presented in chronic (non-suppurative) hæmorrhagic osteomyelitis."

Comment seems almost superfluous.

So far as I am aware, no instance of spontaneous cure has ever been reported in cases where the diagnosis of myeloid sarcoma had first been fully authenticated; and while it is freely admitted that hæmorrhage, cystic change, and fibrosis commonly occur within the tumour, no sufficient evidence has been produced to show that these changes ever progress to a condition of true fibrous or fibrocystic osteitis, still less to genuine "cure." Some of the reported cases of "hæmorrhagic osteomyelitis," as in the recent paper by Arnold,[1] would appear to be simply examples of benign bone cysts, with or without fracture and hæmorrhage into their interior. There is nothing in the history of the four cases described by this author to suggest that they had ever been the subject of myeloid sarcoma, and in the only case which was submitted to microscopic examination, no adequate histological description is given.

The microscopic characters of the tumour, again, do *not* resemble those of hæmorrhagic granulation tissue, especially in the more cellular, less degenerate parts of the growth. This fact is well demonstrated in the case of a myeloid epulis which has fungated through the gum. In such cases the tumour becomes clothed with a layer of granulation tissue, often hæmorrhagic, and the structural contrast, microscopically, between the inflammatory and the neoplastic tissue is most striking. The heterogeneous cellular picture described by Barrie, with numerous polymorphic and endothelial leucocytes, eosinophils, &c., is only met with in those portions of the growth which are the seat of advanced hæmorrhagic and degenerative changes, an appearance not uncommon in many varieties of tumour.

Conclusions.

The view of myeloid sarcoma which it is desired to put forward is based on the conception of bone as an intimate association of two tissues, (1) the osteoblastic and osseous tissue proper, from which osteosarcoma arises, and (2) the specialised fibrous tissue framework, which not only encloses and supports the bony tissue proper, but also provides the multi-nucleated osteoclasts whose function is bone absorption. It is suggested that the latter are derived from this fibrous reticulum itself, and I agree with Schafer [12] that they probably represent a specific form of giant-cell. Myeloid sarcoma, therefore, is a specific tumour taking origin from the fibrous tissue framework of the bone, whether peri- or endosteum, and characterised by the invariable presence of osteoclast-like giant-cells in large numbers. The latter are an integral and essential part of the tumour every whit as much as the osteoclasts are an essential constituent of normal bone, and, being neoplastic, it is unnecessary to assume that some foreign substance, endogenous or exogenous, must be present to account for them. No satisfactory evidence that they are due to a foreign body has yet been produced. About the neoplastic nature of the lesion there can be no doubt, and while no authentic case in which metastasis occurred has yet been placed on record (see footnote above), its local malignancy is so considerable that unless local removal (curettage or resection) is performed in a thorough and careful manner there is quite a considerable likelihood of recurrence in situ taking place. On various grounds stated above Sir James Paget's old term, "myeloid sarcoma," is adhered to as being the least objectionable of any so far proposed. Possibly "osteoclast sarcoma" would be a better name. Chronic hæmorrhagic osteomyelitis is a complete misnomer, being based on a quite erroneous view of the pathology of the condition. The myeloid tumour of tendon sheaths (Stewart and Flint [14]) bears only a superficial resemblance to myeloid sarcoma of bone, and is probably endotheliomatous in nature.

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AMONG those called to the Bar on Nov. 17th was Surg.-Commander R. St. G. S. Bond, M.B., F.R.C.S. Edin., R.N., Director of Medical Studies and Professor of Hygiene, Royal Naval College, Greenwich.

INTRACRANIAL HÆMORRHAGE IN THE NEW-BORN,

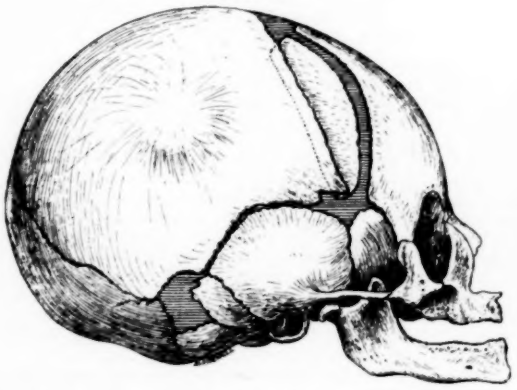
WITH OBSERVATIONS ON FRACTURE OF THE SKULL OF THE INFANT.

BY ALARIC C. BALLANCE, M.B., B.CH. OXF.,
AND
SIR CHARLES A. BALLANCE, K.C.M.G., C.B., F.R.C.S. ENG.

THE following details of a case of intracranial hæmorrhage in the new-born are given as a preface to some general observations on fracture of the skull of the infant.

The mother was a primipara aged 32. The external measurements of the pelvis were found to be slightly below the normal. Labour was slow and prolonged, delivery was effected by forceps, but with difficulty—indeed, at one time it was doubtful whether with forceps alone delivery could take place. The child, a male, was born in a state of white asphyxia, and artificial respiration was performed for half an hour before he breathed naturally. He weighed 9 lb. 10 oz. There was a large caput succedaneum. During the following two days it was noticed that the child was continually crying, and that the cry was not the normal cry of a healthy baby. On the third day a long screaming fit occurred, and, following this, an elongated soft swelling was observed on the right side of the head extending from the antero-median fontanelle to the antero-lateral fontanelle. The middle of the swelling was three-quarters of an inch in width, and rose three-quarters of an inch above the level of the scalp. On palpation the edges of an opening in the skull could be clearly defined; the posterior border was straight and appeared to be at the fronto-parietal junction. The anterior border was concave, so that the opening was wider in the middle than at the upper and lower limits. There was no subjunctival hæmorrhage, no contralateral paresis, the reflexes were normal, and the taking of nourishment was not interfered with. The head was 14⅞ in. in circumference; the horizontal distance from the glabella to the inion was 5¾ in., and the vertical distance of the scalp on the vault from the level of the auditory meatus was 3¾ in. As the infant was taking food normally, it was decided that if all went well and the swelling did not increase, an operation should not be performed immediately.

FIG. 1.



Diagrammatic representation of skull, showing broken fragment of frontal bone depressed and lying partly under anterior border of parietal bone.

Operation on Fourteenth Day.—A vertical incision was made through the scalp, half an inch posterior to the swelling, from the bregma to the region of the anterior inferior angle of the parietal bone. The scalp was then dissected off the swelling in front. This was seen to be pericranium with dark fluid showing through it. On incision of the pericranium about 2 oz. of dark treacly blood escaped, and the broken fragment of the frontal bone became exposed to view. This was depressed about one-third of an inch and it had been shifted a little backwards, so that its posterior border lay under the anterior border of the parietal bone (see Figs. 1 and 2). The dura mater had been separated for about 1 in. in front and for about 1 in. behind the opening, from the frontal and parietal bones. There were several small clots which required removal from under the edges of the opening. The main mass of the extravasated blood had not clotted, but was in the condition of the blood in the well-known experiment of the "living test tube."

The close attachment of the dura to the bones of the cranial vault in the new-born made it difficult to elevate the depressed fragment of frontal bone. There were signs of further bleeding when an attempt was made to elevate it, and as this could not be controlled while the broken fragment was entire, it was removed in pieces. The bleeding was then found to have come from a branch of the middle meningeal artery which supplies the frontal bone, and which had been injured close to the place where it is given off from the main trunk of the artery. A slight bleeding was still proceeding, but was easily arrested. On removal of the depressed fragment of frontal bone the dura rose to its normal position. The pericranial flaps were laid back in place and the scalp sutured with gossamer silkworm gut. The opening in the skull was 2½ in. from above downwards and three-quarters of an inch wide.

The baby made a good recovery. Six weeks after the operation no opening in the skull could be detected, so rapidly had the pericranium thrown out new bone. It is obvious that the slight symptoms observed (e.g., no contralateral paresis) were due to the depression of the broken fragment of bone which allowed the escape of the effused blood from within the cranial cavity to the subpericranial region beneath the scalp.

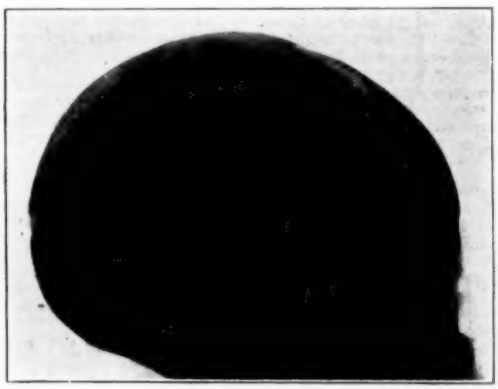
Remarks.

In the Museum of the Royal College of Surgeons of England are two specimens of fracture of the skull at birth, both described in the Jacksonian prize essay of Sir Crisp English, 1902.

No. 877A is the skull of a child at term showing a depressed fracture of the anterior inferior angle of the parietal bone due to the use of forceps in a case of contracted pelvis. The mother, aged 32, had had one miscarriage. Much force was used in the delivery of the child by means of the forceps. In addition to the fracture of the right parietal bone, there is a fissured fracture through the tip of the great wing of the sphenoid on the left side.

No. 877B is the skull of a child at term showing a depressed fracture of the frontal bone due to pressure on the sacral promontory in a case of contracted pelvis. The mother was a primipara aged 26. As the head did not progress forceps were applied. The child on being extracted stopped breathing after a few gasps, and all efforts to resuscitate it were unavailing. Examination of the mother's pelvis showed diminution in the conjugate diameter, with marked projection of the sacral promontory—a flat rachitic pelvis. The scalp over the left frontal region was extensively bruised, and a very large caput succedaneum had formed over the vertex. There was marked over-riding of the sutures, the right frontal bone overlapping the left. The depression was obviously caused by the projecting sacral promontory, and not by the forceps, which had left no appreciable mark.

FIG. 2.



Radiographic appearance of skull, showing fissure and broken fragment of frontal bone.

Observations of Various Writers.

Harvey Cushing,[1] in 1905, reported four cases in which surgical intervention was employed for the relief of intracranial hæmorrhage in the new-born. Details of these cases are given and two were success-

fully operated on. Each case was an example of difficult forceps delivery.

Cranial palsies, epilepsy, and other nervous disorders which may be a permanent life disablement may ensue from the untreated hæmorrhages arising from trauma during birth. The unsupported venules passing to the longitudinal sinus and pacchionian bodies are easily broken, and thus large extravasations may occur in the subdural space while the giving way of the thin-walled vessels on the outer surface of the dura may occasion extradural hæmorrhage. The extravasations are usually unilateral. Cushing says these hæmorrhages give rise

"to post-natal asphyxiation, a bulging fontanelle without pulsation, convulsions, contralateral palsy, a stabile pupil, ocular proptosis, subjunctival hæmorrhage and œdema on the side of the hæmorrhage, irregular respiration, slowing of the pulse and a rise of temperature, inability to take nourishment, and death."

In the fœtal skull the sutures are absent, the adjacent margins of the bones of the skull are separated by fibrous septa continuous with the dura mater internally and the pericranium externally; hence it is difficult to separate the flat bones of the vault from the underlying dura mater, each bone being lodged as it were in a dense membranous sac. The bones of the vault consist of a single layer without any diploë. The effect of an injury to the cranial vault of an infant is as a rule limited to one bone, and this is naturally the result of the anatomical conditions of the cranium present at this period of life. Cushing writes in the paper above referred to:—

"The calamities of childbirth are responsible for a large proportion of crippled and spastic children that come under our care. The vessels most likely to rupture are those which ascend over the cortex and enter the longitudinal sinus from the mid-cerebral region. Rupture of vessels may take place on one side only, extravasation is indeed usually limited to one side of the falx, though bilateral lesions are common enough, as the many patients with diplegia would indicate. Birth palsies due to injury are commonly supposed to be bilateral, and many of the writers on the subject regard the spastic diplegias or paraplegias as the typical cases of Little's disease. Some at least, however, of the spastic hemiplegias must also be due to injuries sustained at birth. Epilepsy is a common sequela in recovered cases. In these late stages any form of therapy is hopeless. On the other hand, a new-born child stands operation for the removal of intracranial or subdural hæmorrhage well. It is to be noted that symptoms may not arise till some days after birth. Fever and unilateral convulsions on the fifth or sixth day after birth must not be mistaken for an infective process."

Cushing's cases in brief are as follows:—

1. Male, seen three days after birth. Mother a primipara, aged 35. Labour prolonged. Child deeply asphyxiated at birth. Can move both arms and legs. General convulsions. Left eye kept closed. Left pupil dilated. Cheyne-Stokes respiration at time of operation. Operation: Osteoplastic flap, left parietal bone. Dura tense, plum-coloured. Much clot removed from subdural space. Death eight hours later.

2. Baby seen one week after birth. Mother primipara. Tedious breech presentation. Pallid asphyxia present at birth. Temperature rose to 101·6° F. on fifth day. Pulse 80. Sixth day convulsions, mostly left-sided and with cyanosis. Fontanelle bulging, tense. Operation: Osteoplastic flap, right parietal region. Dura tense and plum-coloured. On opening it much blood and clot removed. Recovery.

3. Girl seen on eighth day. Difficult forceps labour. At birth child profoundly asphyxiated. On third day protrusion of left eye with subconjunctival hæmorrhage and swelling. Refused to suck. Convulsions and twitching, especially of right hand, noticed. Fontanelle very tense. Operation: Osteoplastic parietal flap on both sides. On opening dura much blood-clot removed, and much cerebro-spinal fluid escaped. Recovery.

4. Second child, precipitous labour, seen on third day. Cephal-hæmatoma left parietal region. Left pupil larger than right. Pulse slow. Failure to take nourishment. Superficial veins of scalp very full and visible. Right limbs more rigid than left. Convulsions. Operation: Left parietal osteoplastic flap, dura plum-coloured. On incision much clot removed. Child suddenly stopped breathing and all efforts to restore spontaneous respiration failed. Autopsy: Hæmorrhage limited to left side of falx. Cortex uninjured. One of the large cortical veins was found torn close to its point of entry into the longitudinal sinus. The cephal-hæmatoma was not connected in any way with the subdural hæmorrhage.

Von Bergmann[2] figures a case of Bruns of fracture of the frontal bone extending into the orbit in a new-born infant. He writes: "In rare cases the pressure of the forceps may cause fracture of the skull, particularly of the frontal bones. Generally it is not the closure of the blades that is responsible for the fracture but the violent pressure of the head against the promontory as it is forcibly dragged through the pelvis."

In E. D. Truesdell's[3] volume radiograms are given of birth fractures, as follows: (1) Fracture of occipital bone, breech delivery; (2) transverse fracture, right half of frontal bone, forceps delivery; (3) fissure fracture, right parietal bone; (4) fissure fracture, right parietal bone, face presentation.

Subcranial hæmatoma is said to be characteristic of these fractures. Kosmack* reported four cases, all forceps cases, three frontal fractures and one parietal; operation successful in each case. In the case reported by Dr. A. B. Davis depression of the frontal bone resulted from pressure on the infant's brow by the promontory of the sacrum. The rule, Truesdell says, is to operate on all these fractures, especially if they are depressed.

Ernest Bumm[4] gives three figures showing deep depression on the infant's skull at birth. In two cases the depression occupied the left parietal region and in one the right parietal region. The latter was thought to be due to pressure on the sacral promontory.

William Sharpe[5] points out that in fractures of the infant's skull it is not the fracture that is the important point but the lesion beneath the fracture. In his paper extensive fractures of the parietal and frontal bones of the new-born infant are illustrated. Lumbar puncture is said to be of great use in the diagnosis of subdural bleeding. Increase of intracranial tension is always present; it can be measured with the mercurial manometer during lumbar puncture, and by the use of the ophthalmoscope. It is advised to operate on all depressed fractures; and sub-temporal decompression is recommended.

Dr. Vaglio[6] quotes the remark that the mortality is higher on the day of birth than on any other day that humanity has to meet. The percentage of this mortality, which is due to obstetric injuries, is variously estimated as 5 and 1. Intracranial hæmorrhage is the chief harm that results. Extravasated blood should always be evacuated, and a few cases in which this has been done are cited. In Vaglio's own case convulsive movements of head, eyes, and limbs occurred on the second day. By lumbar puncture a large quantity of bloody fluid was withdrawn. Great improvement at once took place. Hæmorrhage, it was thought, could not have been large as patient made an excellent recovery. The symptoms were due to high pressure of the cerebro-spinal fluid. At the age of 6 months the child was the picture of health.

Dr. Foote[7] writes that in the new-born with intracranial hæmorrhage there may be a general tendency to bleeding. Other hæmorrhages (stomach and rectum) have been observed after a cranial operation has been successfully done. In 7 cases in which treatment was by lumbar puncture 1 died. In 36 autopsies on stillborn infants or those dying shortly after birth, 50 per cent. showed hæmorrhage over the brain cortex and 5 of the infants vomited blood before death. In one of these cases 12 hours after birth the face became blue and the respiration laboured. There were no marks of head trauma. The coagulation-time of the blood exceeded nine minutes. Blood came from the stomach, rectum, nose, and ears. In one case recovery is recorded after treatment by thromboplastin and horse serum. Dr. Foote's conclusions are that (1) Intracranial hæmorrhage of the new-born may be a local manifestation of a general condition; (2) early lumbar puncture and the use of substances which increase the coagulability of the blood should be given even prior to operation.

* Bulletin of the Lying-in Hospital, N.Y., vol. ix., No. 1.

Fractures Resulting from Direct Post-Natal Injury.

As the consequence of direct injury, during early infant life, similar fractures occur, as happen sometimes during delivery. Indeed, such fractures, without fissures radiating in many directions, are to be expected till the time comes when the bones of the cranium are united by sutures and not simply joined together by fibrous tissue, and when they are no longer thin lamellæ without diploic tissue separating an inner and outer table.

Frazer[9] writes: "The diploë appears about the age of 10 years; it becomes most developed in bones that are thick." Sir Arthur Keith[9] writes: "The membrane-formed bones consist at first of a thin lamella of osseous fibres radiating out from the point at which ossification commenced. The osteoblasts beneath the pericranium on the outer surface of the lamella and the dura mater on the inner surface deposit bone, and by the fifth year an outer and inner table, with diploic tissue between, are developed." In the Museum of the Royal College of Surgeons of England a section of a skull of the age of 3 years shows diploic tissue at the glabella, at the inion, and at the anterior inferior angle of the parietal bone, while the intervening bone shows no diploë and no differentiation into an inner and outer table. A section of another skull of the age of 5 years shows diploic tissue throughout the bones of the cranial vault. In another specimen of a skull at the age of 15 months the sutures separating the cranial bones are beginning to be well seen.

The facts in regard to the infant's skull after birth were pointed out very clearly by Sir Rickman Godlee in a paper read before the Pathological Society in 1885, entitled On Simple Fracture of the Skull in Infants followed by the Development of Pulsating Subcutaneous Tumours. The pulsating mass may consist of blood and cerebro-spinal fluid with or without brain matter. Godlee's cases were aged 5 months and 8 months and both suffered parietal fractures. In both cases the injury was caused by a fall out of window in one of 8 and in the other of 14 feet. In one of the cases the brain cortex was ruptured so as to open the ventricles. Godlee writes:—

"When a young child receives a blow on the head the mischief is almost all spent upon the part struck and that lying immediately beneath it. The process extends little if at all beyond a single bone; indeed, no one of the common fractures of the skull as we meet with them in the adult can take place in its typical form in an infant, but, on the other hand, there are forms of fractures special to the young skull. There are fractures of the infant's skull which would have been undetected (the bone after breaking the adjacent dura and severely lacerating the brain having sprung back in place) had not actual brain matter been found in the wound beneath the scalp or in the pus (as I saw in one case) evacuated from the suppurating hæmatoma which formed over it."

Many other surgeons have described such cases. In Warrington Haward's[10] case a child 19 months of age fell 15 feet on to its head, sustaining a fracture of the frontal bone above the right eyebrow. A tense translucent swelling appeared in this region; this was tapped and cerebro-spinal fluid withdrawn. The child died of meningitis two weeks later. Before death left-sided convulsions occurred.

Clement Lucas[11] described three cases:—

1. Girl, aged 2 years and 6 months. Three months before admission fell 18 feet from a window. Unconscious for some hours. A fluid, non-pulsating swelling formed on left side of head, occupying the temporal fossa. A fracture could be felt running in an irregular horizontal line beneath the swelling. In two months the swelling disappeared, and the child was discharged from hospital. The patient died in hospital one year and nine months later of meningitis. She was readmitted to the hospital in an emaciated rachitic state due to gross neglect. The post-mortem examinaton showed that at the time of the accident extensive injury to the brain occurred; and that the contents of the tumour were in communication with the lateral ventricle.

2. Boy, 1 year and 11 months, fell 10 feet from a window. Unconscious and convulsed for some time. Pulsating fluid swelling appeared left frontal region. Vertical fracture through left half of frontal bone felt through tumour. Two months later the child left hospital well; the pulsating fluid swelling had disappeared.

3. A child, 1 year old, fell 12 feet down a staircase. Convulsions followed. Left side paralysed. Swelling left parietal region. Trephining; paralysis passed away. Escape of cerebro-spinal fluid from wound on fourteenth day. Death on twentieth day from meningitis. Post-mortem: The injury to the brain had extended to the ventricle.

Clement Lucas, from the study of these and other cases, drew two conclusions: (1) That cases of simple fracture of the skull followed by collections of cerebro-spinal fluid beneath the scalp are peculiar to young children, and (2) that when cerebro-spinal fluid escapes through the vault (whether the fracture be simple or compound) the injury has extended to the ventricular cavity.

Sir Thomas Smith[12] described two cases:—

1. A boy of 8 months with a right parietal swelling containing cerebro-spinal fluid. Two months before admission to St. Bartholomew's Hospital he fell 8 feet out of a window, the injury being followed by collapse, irregular breathing, convulsions, most marked on the left side, and inability to swallow. Death took place a week after admission and post mortem a long wide horizontal gap was found in the right parietal bone.

2. A girl, aged 3 years; when 4 months old she fell on her head and was unconscious for one week. On examination she was found to have a soft fluid pulsating swelling corresponding to the right occipital region. On firm pressure no sense of resistance was met with. There seemed to be a complete absence of bone at the site of fracture. The child was admitted to St. Bartholomew's Hospital for synovitis of the left knee and strumous disease of a phalanx. The occipital swelling was not the cause of any symptoms. "Of these two cases it is to be remarked that the size of the gap in the skull is too considerable to be accounted for by fracture alone. Nor can the opening in the cranium represent a piece of detached bone. There must have been some considerable removal of bone by *absorption* subsequent to the fracture. The absorption may be due in these two cases to injury to the growing centre of the affected cranial bones."

Sir Thomas Smith refers to the cases of Clement Lucas and Warrington Haward and to one mentioned by Sir John Erichsen.† Also to two cases described by Dr. Corner,‡ and concludes with the statement—

"That though so far 22 cases have been described, it may well be doubted if the number of recorded cases adequately represents the frequency of the lesion. Aspiration is a help to diagnosis but cannot be regarded as a curative measure."

Golding Bird[13] reported the case of a girl of 7 months who fell to the floor from the lap of a woman who was nursing her. A large pulsating fluid tumour developed in the right parietal region and disappeared in about three and a half weeks.

In Sawicki's[14] essay some interesting cases are cited—

(1) Dembowski's case, a boy, 1 year and 4 months old, who fell on his head one month before being seen, and showed fracture of right parietal and frontal bone. A swelling appeared and grew rapidly so as to occupy the right half of the skull. Illustrations are given showing the child's head before and after operation. At the operation part of frontal and most of parietal bone depressed and almost detached. Displaced bone replaced and the gap which still remained was closed by pericranial flap. Complete recovery. (2) Schramm's case, a girl, 5 months old, seen two months after a fall from a height; right parietal meningocele resulted. (3) Koajewski's case, a boy, 4 years old, who at age of 16 months fell on head. Right parietal traumatic meningocele formed. (4) Bossowski's case, a boy, 4 years old, who fell on his head some time before being seen. Left fronto-parietal traumatic meningocele followed. (5) Bossowski's second case, an infant, 17 months old, who fell on head. Right parietal swelling following. A fissure fracture of the os parietale could be palpated.

Dr. Bastian's[15] case is as follows:—

A boy, aged 4 years, fell 22 feet out of a window. In falling he struck the left side of his head against a projecting window-ledge, and was unconscious for four days. A large non-pulsating tumour formed over the left parietal bone; he was seen three and a half weeks later, when right hemiplegia, aphasia, and paralysis of left third nerve were noted. The swelling was slowly increasing in size. Operation: Much brain substance under scalp. Oblique fracture of parietal bone. The edges were so clean that they might have been cut with a knife, and were separated about one-third of an inch. The edges of the fracture had evidently sprung back

† Science and Art of Surgery, vol. i., p. 423, sixth edition.
‡ American Journal of the Medical Sciences, 1884.

in place, bringing brain substance with them, after the fracture and bone depression had taken place. The dura mater was cut through in position and extent corresponding to the fracture in the bone. The operation was soon followed by disappearance of the encephalocele and all swelling. Two years later speech had returned; power over the right leg was restored, but the right hand was useless.

Remarks.

It will be seen from the cases narrated that the pioneer papers illuminating fractures of the infant's skull after birth were contributed by Clement Lucas, Thomas Smith, and Godlee, while the same is true of Harvey Cushing concerning the fractures of the skull in the new-born. At both periods of life the fractures tend to be of the same type, and so the surgical treatment suitable for the one is also proper for the other.

Clement Lucas was especially interested in the escape of cerebro-spinal fluid in the fractures of the vault, and came to the conclusion that when cerebro-spinal fluid escapes through the vault the injury has extended to the ventricular cavity. It may well be that in any severe injury to an infant's skull the delicate tissue (the fluid texture) of the infant's brain may suffer a rent which reaches the ventricle at the same time that the bone fracture occurs; but we now know that cerebro-spinal fluid may escape from the subarachnoid spaces of the cortical meninges of the cerebrum and cerebellum in considerable quantity without there being any direct communication with the ventricles. In cases of brain tumour when a decompression is carried out by the removal of a portion of the cranial vault and incision of the dura mater, the absence of a flow of cerebro-spinal fluid may be accounted for by the brain rising into the craniectomy opening and acting as a cork. Harvey Cushing urges justly that operation should be undertaken promptly, not only to obviate impending death but also in case of the recovery of the infant to anticipate and prevent the common sequelæ of such injuries—paralyses, amentia, epilepsy, &c.—which cause the child to become a burden to its parents and a useless member of the community. Though the surgeon is apt to pride himself on some successful operations for the cure of traumatic epilepsy, it surely ought to be his object to avoid such operations. This can only be accomplished by operating shortly after the occurrence of the injury to the infant's skull. The elevation of depressed bone, and the removal of subcranial or subdural clots may well obviate the necessity for operation later on in life, the success of which is by no means assured.

Dr. Benjamin Winslow Dudley,§ professor of anatomy and surgery in Transylvania University, in 1828 contributed to the literature of the subject a remarkable paper, in which were described, among others, the following two cases:—

1. A man, aged 21, who when 5 years old received an accidental blow on the left parietal region. Paralysis of the opposite side ensued and slowly disappeared. Pain in the head and attacks of faintness occurred till the fourteenth year, when severe epileptic convulsions supervened every two or three weeks. These were soon followed by loss of memory and stammering speech. There was a cicatrix over the original site of injury. At operation, May 10th, 1825, a portion of depressed bone was removed. A spicule of the inner table was fixed in and perforated the dura. Twelve hours after operation cerebro-spinal fluid began to escape and continued in large quantity for three days and three nights. The quantity of fluid that escaped was estimated at two gallons. Patient made a complete and perfect recovery.

2. A man, aged 24, who, when 5 years old, was kicked by a horse. The parietal bone was fractured and depressed. From the fifteenth year epileptic convulsions occurred every two or three weeks, and mental enfeeblement was marked. At operation, February, 1826, most of the depressed bone was removed by the trephine. A spinous process projected from the inner table about half an inch long. The dura beneath the depressed bone was in part defective. Between the dura and the brain was a sinus (arachnoid cyst), the size of a hen's egg, containing colourless fluid. The patient made a complete recovery, regaining perfect health.

§ American Journal of Medical Sciences, vol. ii., 1828, contains an abstract of a paper on injuries of the head and the cure of traumatic epilepsy from the first number of the Transylvania Journal of Medicine.

Dudley remarks that—

"In skilful hands the operation of trephining beyond the atmosphere of large cities is neither dangerous in its consequences nor difficult in execution."

These two cases serve to remind us that successful operations for traumatic epilepsy were not first performed by the present generation of surgeons or even by its immediate predecessor. They also emphasise the importance, well recognised at the present time, of operation on all depressed fractures, including those of infants.‖ The first case quoted is an illustration of profuse escape of cerebro-spinal fluid from an injury of the vault. The injury in this case did not at first appear very severe; the boy was not unconscious, he was able to walk home from school, and it does not seem likely that the injury to the brain extended as far as the ventricles.

Lastly, it may be affirmed from our experience that infants bear well operations on the skull, carried out with the greatest gentleness, and with every effort to prevent loss of blood. This is a confirmation of the views of Harvey Cushing. Since the dawn of the Listerian era of scientific surgery, we, unlike the older surgeons, can operate on the skull of the infant without fear of sepsis and with every confidence of success.

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‖ Erichsen: Science and Art of Surgery, tenth edition, vol. i., p. 736, 1895: "Non-interference is the proper course to pursue in some cases (simple depressed fracture without symptoms), more particularly in children, there can be no doubt." The view long held that a boat-shaped depression on an infant's skull need not be elevated is not now tenable.

A NOTE ON THE USE OF DIMOL IN THE TREATMENT OF SUMMER DIARRHŒA IN INFANTS.

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IN a disease so fatal to the infant life of the country as so-called summer diarrhœa, any new method of treatment must be considered which appears to hold out more hope of success than those at present in vogue. I therefore communicate the results obtained last summer (1921) in the treatment of a small number of cases of acute and subacute diarrhœa with dimol syrup, in the hope that others may give the treatment a trial. Dimol is in constitution dimethylmonomethoxyphenol and resembles creosote in taste and odour. It is said to be 35·5 times more potent than phenol and to be entirely non-irritant, non-toxic, and non-absorbed. At present it is sold in the form of a syrup and in two kinds of pulverette. I used the syrup in doses of approximately one drachm for babies 9–15 months old, and half a drachm for babies 3–9 months old, every four hours.

Unfortunately only a small series of cases, 23 in all, was obtained, as the use of the drug was not commenced till the second week in September. In order to put it to as severe a test as possible, in the first series of 16

SERIES I.

No.	Age in years.	Severity.	No. of motions per day.	Duration in days.	Feed.	Nature of motions.	Time before stools improved in days.	Time before stools normal in days.	Result.	Treatment. Remarks.
1*	4/12	II.	V.F.	1	Glaxo.	G.W.S.O.	1	2	Cured.	Syr. dimol ℥ ss.†
2*	6/12	II.	V.F.	2	,,	G.L.O.	3	14	,,	Syr. dimol ℥ ss.
3	2	I.	V.F.	42	—	B.O.S.	—	—	Unimproved. Not seen after 3 days.	Syr. dimol ℥ ss.
4	1 2/12	II	Hourly.	¼	—	Y.W.S.O.	1	?	? Cured.	Syr. dimol ℥ i.; seen early.
5	1 3/12	II.	3–6	21	—	Pale Y. W.O. Blood and mucus.	—	—	Unimproved after 7 days.	Syr. dimol ℥ i.
6	11/12	I.	—	2	Breast.	W.S. very O.	1	1	Cured.	Syr. dimol ℥ ss.; teething.
7	1 7/12	I.	2–4	14	—	G.W.S.O.	? 5	? 7	,,	Syr. dimol ℥ i.
8	8/12	II.	12	7	Ambrosia.	G.W.O.	1	2	,,	Syr. dimol ℥ i.
9*	10/12	II.	F.	7	—	G.W.O. Blood.	2	4	D. cured. V. relapsed.	Syr. dimol ℥ i.; cardiospasm.
10*	3/12	I.	5–6	3	Breast.	G.W.S.O.	1	1	Cured.	Syr. dimol ℥ ss.
11	1 10/12	I.	5+	42	—	Y.S.O.	—	—	Unimproved after 7 days.	Syr. dimol ℥ i.; subacute.
12	3/12	I.	3–4	3	Ridge's.	G.W.S.O.	2	4	Cured.	Syr. dimol ℥ ss.
13	3 10/12	II.	—	¼	—	Blood and mucus.	1 dose.	1	,,	Syr. dimol ℥ ii.
14*	10/12	I.	3–5	9	Nestlé.	G.W.S.O. Lienteric.	2	4	,,	Syr. dimol. ℥ i.
15*	11/12	II.	10	1	Breast.	Y.W.O.	2	5	,,	Syr. dimol ℥ i.
16	1 7/12	I.	—	14	—	Clay. O.L.	3	5	,,	Syr. dimol ℥ i.; teething.

Series I.—No. 1. In-patient. Water feeds for 12 hours, but no purge. No. 3. Dose too small. No. 9. Diarrhœa cured but vomiting relapsed; was admitted and later cured. The condition appears to have been cardiospasm. No. 15. Water feeds only for 12 hours, but no purge.

* All cases had diarrhœa: those marked with an asterisk had vomiting in addition.

† Nos. 1 to 16.—Four-hourly doses of syr. dimol in each case.

Nature of Motions.—B, brown. G, green. Y, yellow. L, loose. O, offensive. S, slimy. W, watery. F, frequent. V.F., very frequent.

SERIES II.

1*	4/12	II.	12	2	Cow's milk.	Y.W.S.	2	?	Improved. Not seen after 4 days.	Castor oil ℥ i.; syr. dimol ℥ ss.†
2*	1 8/12	II.	V.F.	2	—	Y.W.S.	—	—	Unimproved. Vomited dimol.	—
3*	2 6/12	II.	8	3	—	—	6 hours.	1	Cured.	Castor oil ℥ ii.; syr. dimol ℥ ii.
4*	3/12	II.	10	3	Nestlé.	G.S. Sour. Lumpy.	1	?	Improved.‡	Castor oil ℥ i.; syr. dimol ℥ ss.
5	3/12	I.	6	28	Allenbury I.	Dark S.O. Blood.	1	1	Cured.	Castor oil ℥ ss.; syr. dimol ℥ ss.
6	1 1/12	II.	6	14	Cow's milk.	G.W.S. Blood.	1	2	,,	Castor oil ℥ i.; syr. dimol ℥ i.
7*	9/12	II.	12	1	Breast.	G.W.	1	2	,,	Castor oil ℥ i.; syr. dimol ℥ i.

Series II. (Treatment column).—Nos. 1 and 3 to 7, water feeds for 12 hours.

† Nos. 1 and 3 to 7.—Four-hourly doses of syr. dimol in each case.

‡ Eventually cured, though the time taken is uncertain.

cases, with two exceptions, I employed no treatment whatsoever beyond giving dimol—i.e., I gave no purge and made no alteration in the feeding. Moreover, with one exception, all these cases, and the ensuing seven in the second series, were treated as out-patients. In the second series of seven cases I gave a preliminary purge (castor oil) and allowed only plain water feeds for 24 hours, in addition to giving dimol.

Details of the two series are given in tabular form. The cases are divided roughly, according to their severity, into three grades: (1) mild cases, (2) fairly severe cases, (3) very severe cases of the profoundly toxic type. Only two cases of the last grade were treated with dimol. Both vomited the dimol and both died. They are not included in the table.

With reference to the classification, it should be borne in mind that the number of stools is not always an indication of the degree of toxæmia or collapse.

As will be seen from the first table, of the series of 16 cases, 3 were unimproved, 1 was improved when last seen after 24 hours and was probably cured, and 12 were cured. In those cured, the average time elapsing before the stools improved was two days, and before they returned to normal four days. Of the other 7 cases in the second series, 1 vomited the dimol, 2 were improved when last seen, and 4 cured. In view of the facts that in the first series the feeds were continued and no purge given, the results obtained were, in my opinion, very satisfactory.

Remarks.

1. *Purging.*—I do not, of course, recommend that a purge should be withheld. The best results appear to be obtained by giving a large dose of alkali (sod. bicarb. gr. xx., aq. menth. pip. ℥i) to begin with, especially if there is vomiting; and smaller doses may be given with benefit four-hourly, to combat the acidosis which appears to form such a large factor in these cases. This initial dose is followed after an interval of half an hour or so by the purge, and then plain water feeds given in conjunction with the dimol. Feeding is then gradually resumed in the ordinary way.

2. *Severity of Cases.*—While several of the cases were quite severe the general impression gained was that the absolute severity of the epidemic was not as great as in previous years. This may, to a certain extent, have been due to local conditions, such as better milk-supply or better home conditions.

3. *Dosage.*—The full dose of dimol for the age should be given. One drachm of the syrup (=0·3 gr. dimol) to the year four-hourly is the dose recommended, and less cannot be relied upon to act efficiently.

4. *Ill-effects.*—I have used dimol syrup in a fair number of cases now, in addition to those detailed in the table, and in no single case have I observed any irritant effect. In spite of the strong taste of dimol (resembling creosote) infants take it well when the syrup is diluted with an equal part or more of water, and only very seldom is it vomited. In older children the syrup can be given in milk, jam, or malt.

5. *Bactericidal Effect.*—I am not in a position to express an opinion as to the selective action of dimol, or its effect on intestinal flora other than the *B. coli communis*, but I have grown this latter organism from

the fæces of children receiving full doses of dimol four-hourly.

6. Owing to the small number of cases treated, it is impossible to draw any wide conclusions. The results, however, appear to justify further investigation, and are given in the hope that other observers may give the treatment a trial and report their results.

7. I have only to add that I have no interest whatever, financial or otherwise, in the preparation or sale of dimol.

ON THE TREATMENT OF NON-MALIGNANT AFFECTIONS OF THE COLON.

BY SIR W. ARBUTHNOT LANE, BART., M.S. LOND., F.R.C.S. ENG.

WHEN I was asked to open this discussion* I willingly acquiesced, though I felt the honour was greater than I was able to do justice to.

It was formerly customary to regard the several abnormal conditions of the colon as separate entities or diseases. Personally, I do not accept this situation, but consider them to be one and all the direct or indirect results of chronic intestinal stasis. In order to substantiate the accuracy and correctness of my views I must first draw your attention to the two great groups of conditions which I found in the living abdomen—namely, those cases of intestinal stagnation in which a reaction takes place and those in which it is altogether absent.

Group Characterised by the Formation of Bands.

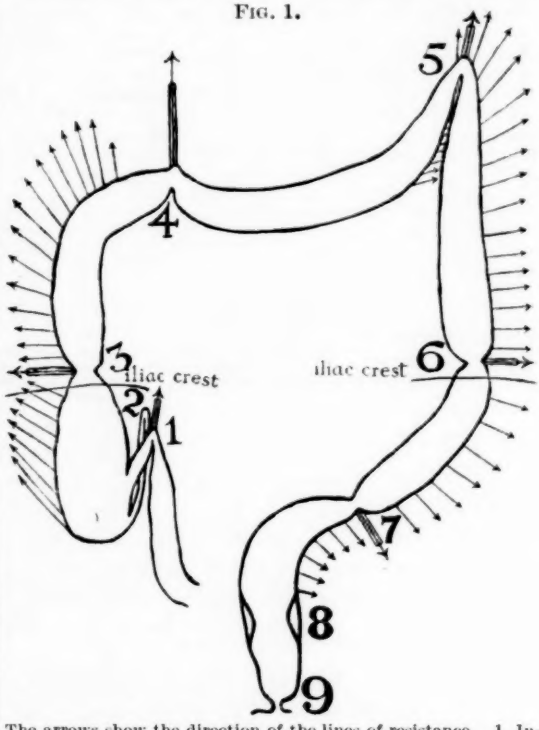
In the vigorous subject delay of the accumulated contents in the pelvic colon leads to the formation of acquired bands on the under surface of the mesentery securing the junction of the iliac and the pelvic segments of the colon. The mode of formation of these, as of all the other acquired bands which develop to hold up and secure a loaded colon, is very simple. They commence as streaks on the surface of the mesentery, starting from its base and encroaching gradually along its length. After a time they reach the wall of the intestine. The streaks soon become a distinct membrane which, at a later period, may be separated from the mesentery except at its base, and at its terminal extremities. This membrane tends to contract and to drag the bowel towards the iliac fossa, where it finally becomes firmly fixed. The fibres that grip the colon not only diminish its lumen by angulating it, but they also tend to reduce its calibre still further by rotating it on its long axis.

Like most of the efforts that nature makes to help the individual to bear a useful relationship to his surroundings, this membrane serves a beneficial purpose in the first instance, tending to support the loaded bowel, and so opposing its elongation and prolapse. Later this originally useful structure tends by its contraction to obstruct the lumen of the bowel and to place the life of the individual in serious peril. This membrane in its development is very liable to grip the ovary and Fallopian tube and to fix them immovably on the iliac fossa. It may interfere with the function of the Fallopian tube impeding the passage of the ovum through it and causing extra-uterine fœtation, or it may prevent the entry of the ovum and so render the patient sterile on the left side. Besides securing and fixing the ovary it sooner or later surrounds it, and causes it to undergo a cystic change. Later the degenerating ovary increases in size, bursts through the surrounding membrane, and forms a mobile ovarian tumour.

Gynæcologists are only too familiar with the pain which women experience in the left iliac fossa and which is so often exaggerated by the approach of the period in the struggle of the bowel to force fæcal matter through the anchored and obstructed colon over the sensitive ovary gorged with blood. These conditions have been referred to fully in a paper by Mr. H. Chapple.[1] To this particular acquired band and to its effect on the colon I gave the name of the "first and last kink." The first because it is the earliest of the acquired membranes to develop and the last because it is the lowest in the drainage scheme.

This development of a band controlling the lumen of the lower portion of the bowel is, perhaps, the most important acquired change in the whole body since

FIG. 1.



The arrows show the direction of the lines of resistance. 1. Indicates the ileal kink. 2. The appendix passing up behind the ileum and controlling its lumen in the erect posture (it is secured by evolutionary bands to the back of the mesentery and is itself kinked and its distal portion obstructed by the anchoring adhesions). 3. The strong band which obstructs the lumen of this portion of the colon. 4. The band which extends down from the liver, gall-bladder, pylorus, and duodenum. 5. The splenic flexure, whose angularity is accentuated and whose lumen is correspondingly diminished. 6. The deformity of the descending colon by a band similar to 3. 7. The last kink. 8. The circular band of muscle fibre described by W. J. Mayo. 9. The internal sphincter.

it is the primary cause of a vast amount of subsequent trouble in the gastro-intestinal tract and elsewhere. Its immediate effect in producing an obstruction at this point is to render the partially occluded colon a very common seat of cancer, while in fat subjects the bowel proximal to it is a very usual site of diverticulitis, the causation and pathology of which I described fully in the Guy's Hospital Reports, 1885, in a paper entitled Pathology of Extravasation of Urine. An abstract of this was published in THE LANCET, vol. i., 1920, p. 220. The indirect consequence of the obstruction to the passage of fæcal matter through the first and last kink is the accumulation of material in the whole length of the colon. The increased load in the obstructed bowel results in the development of precisely the same type of acquired membrane on the outer layer of peritoneum which extends from the convexity of the large bowel to the abdominal wall. It serves to fix the colon and to prevent its elongation and prolapse. It is most marked in certain positions where the consequent construction of the lumen of the bowel may produce inflammatory or cancerous changes.

* The discussion took place in the Section of Surgery of the British Medical Association at Glasgow on July 28th, 1922.

[1] Guy's Hospital Gazette, 1921, vol. xxxv., p. 164.

The localities so affected are immediately above the iliac crests, at the splenic flexure, below the gall-bladder, where an acquired band from the liver, gall-bladder, duodenum, and pylorus descends to hold up and later obstruct the transverse colon, over the outer aspect of the cæcum, where it has recently been called Jackson's membrane, and again on the under surface of the terminal mesentery of the small intestine, which, with the end of the ileum, support the cæcum, forming its internal lateral ligament. In America this band has been given my name and is called "Lane's kink." These several acquired bands are illustrated in Fig. 1. I described these in detail more than twenty years ago.

Evolutionary Origin, Function, and Structure of Bands.

What I want particularly to call attention to is that these so-called separate bands are all evolutionary and identical in origin, function, and structure, and are due to the effort of the organism to meet an abnormal loading up of the bowel because of a distal obstruction, and to enable it to perform its function to the best of its capacity and not to prolapse. As I have pointed out, the initial purpose of their existence is carried out efficiently for a time, but later the continued contraction of the newly-formed membranes results in obstruction of the lumen of the bowel and in consequent disease. This is usually most marked at the ileal kink (as I call the one named after me) and at the splenic flexure. Too much attention cannot be paid to the mechanism of these acquired membranes and to the effect they exert both immediately and secondarily upon the functioning of the large bowel. When I first described them their existence was altogether denied. Later when they were found to be only too obvious the tendency was to regard them as separate and independent structures, to argue as to whether they were congenital or inflammatory in origin, or to assert that they have no influence whatever upon the normal function of the intestine. Mr. Chapple carefully examined 52 newly-born fœtuses in Guy's Hospital and could find no trace of bands similar to those I described in the adult. This shows that they are obviously not congenital. No one familiar with the appearance, structure, and mode of development of the bands in the living subject could regard them as inflammatory. On the other hand, anyone who has studied the several changes which the skeleton and soft parts undergo in the varying mechanical relationship of the individual to his surroundings can have no doubt as to their evolutionary origin.

"The Controlling Appendix."

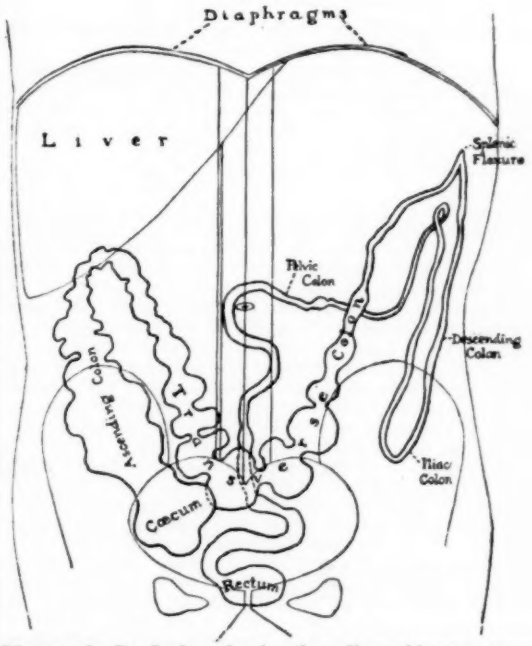
Another important development, which arises not infrequently in consequence of the strain exerted by the loaded cæcum, is what I called "the controlling appendix." It is one of very great pathological and clinical importance. This, like the ileal kink, has now been pretty generally accepted by surgeons. Instead of developing a membrane on the under surface of the mesentery of the terminal ileum the appendix is employed in the novel function of a ligament. It becomes attached by acquired adhesions to the under surface of the mesentery, and therefore it lies behind the end of the ileum. By the gradual contraction of the acquired adhesions it is rendered progressively tighter. Its situation is such that when the ileum and cæcum drop into the pelvis the ileum is kinked abruptly over the anchored appendix, and its lumen is more or less occluded in consequence, like that of an inflated tyre hung over a hook. This controlling appendix, or the equally damaging ileal kink, are responsible for very much of the ileal stasis and infection consequent on their presence and which play such an important part in the sequence of chronic intestinal stasis. The kinking of the anchored appendix itself renders its own lumen liable to become obstructed. Consequently inflammation follows, and this attracts attention to it. The removal of such an anchored appendix is followed by great benefit to the patient.

It is in this type of static colon that cancer of some portion of the gastro-intestinal tract commonly occurs, since the factors that determine cancer and which are simply mechanical are present in a more or less marked degree. Many of the patients are robust and are regarded as healthy people by the casual observer.

Group Characterised by Absence of Bands.

The other extreme type of chronic intestinal stasis is characterised by a complete want of effort on the part of the organism to oppose the elongation and prolapse of the large bowel, no new acquired bands or membranes being formed. The pelvic colon becomes greatly elongated, and, puddling in the pelvis, this long, loose bowel forms many abrupt angles and offers a great obstacle to the passage of solid material through it since the more the individual strains to expel the bowel contents the further is the flaccid gut driven into the lower limit of the pelvis. While in the type first described the acquired band forming the first and last kink constitutes the chief obstacle to the emptying of the colon; in this type obstruction is due to the great elongation and prolapse of the pelvic colon, so that the mechanical conditions are perfectly distinct in the two extremes. (See Fig. 2.)

FIG. 2.



Diagram, by Dr. Jordan, showing the radiographic appearances of an extreme case of chronic intestinal stasis. It was taken while the patient was in the recumbent posture. It is sufficiently clear to require no further detailed description.

Following on this obstruction the proximal colon elongates to a great extent and prolapses. As far as I know the mere prolapse of the rest of the large bowel in no way affects its function, except in the case of the cæcum, when it may twist the end of the ileum and obstruct its effluent.[2] This condition of the cæcum and ascending colon may be greatly benefited by plicating the bowel or by the method of anchoring advocated so strongly by Mr. George Waugh. Curiously enough, the prolapse of the large bowel—or, as it is technically called, enteroptosis—has monopolised the attention of most operators, who attempt to relieve the symptoms of the patient by fastening the bowel in position or by excising portions of the elongated transverse colon. I have seen no permanent advantage from such operations in patients on whom I have operated subsequently, since such conditions are obviously secondary and not primary. In consequence of the obstruction to the passage of the intestinal contents, which results from the elongation of the pelvic colon, an infection of the mucous membrane

[2] This was described and demonstrated in a remarkable manner by Dr. A. C. Jordan.

of the proximal colon takes place, producing a condition called colitis. This infection causes a spasm of the muscle wall of the colon and a consequent reduction of the lumen of the inflamed bowel, so producing a very serious mechanical obstacle to the passage of material through it. As I have previously indicated *the mechanical conditions are perfectly dissimilar in the two extreme varieties of stasis*, while between the two extremes every variety of degree and combination exists.

In this type there is no point of constriction at which hard fæces can be definitely obstructed, and therefore no area of impact where cancer is likely to develop. For this reason cancer of the colon is not seen as a sequel in this form of stasis, though it is common in parts of the body other than the gastro-intestinal tract. This I have discussed fully in many previous communications. I feel that it is most important from the point of view of treatment, medical as well as surgical, that we should render ourselves perfectly familiar with the exaggerated types I have described and with the intermediate varieties.[3]

Operative Interference in the Type Characterised by the Formation of Bands.

In the first extreme type of stasis the conditions which call for operative interference on the colon apart from cancer are the obstruction caused by acquired bands, *by far the most important of which is that which produces the first and last kink.*

The operation that I perform with great frequency is the careful separation of the bands which form this kink and the accurate apposition of the peritoneal edges should any surface be left deprived of its serous covering. Other controlling bands are sought for, and if present are divided. The termination of the ileum is examined and, should a controlling appendix or an ileal kink be present, these are dealt with, and any raw surfaces carefully covered in by peritoneum. If the membrane forming the ileal kink is at all extensive it is important, after freeing it, to leave a drainage-tube in position, for the lymphatics which are divided in the acquired membrane contain septic organisms which, if not drained, readily escape and set up a local peritonitis which may terminate fatally.

The presence of such septic organisms in the area from which the acquired membrane was removed have been demonstrated by cultures made by Dr. Nathan Mutch at the time of operation. This fact accounts for many cases of unexplained fatal peritonitis in operations on the appendix. I may say that I go through this sequence most systematically when dealing with any of the sequelæ of stasis, such as gastric and duodenal ulcer, gall-stones, &c.

The other but very much less frequent complication in this type in fat subjects is diverticulitis. This usually occurs in the area of bowel proximal to the last kink, or it may develop in any portion of the large bowel behind an obstruction. If still definitely non-malignant the most simple method of dealing with this diverticular formation in fat subjects consequent on obstruction is to put the divided end of the ileum into the pelvic colon. *In this case, as in that of colectomy, the patient should be instructed to secure three evacuations daily.* By such means any regurgitation of the contents of the ileum into the colon proximal to the junction can be readily avoided. Occasionally it is advisable to excise the diseased area and to unite the proximal bowel to the pelvic colon. This must depend on the possibility of mobilising the bowel and upon the nature of the intestinal wall. In some cases a colectomy offers the best results.

Another complication of this type of stasis is tuberculous ulceration of the colon which is frequently limited to its proximal half. For this a complete colectomy may be performed, or, if the condition of the patient renders it advisable to limit the extent of the operation as much as possible, the ileum may be divided and be put into the pelvic colon and the colon excised beyond the limit of the area affected by tubercle. What procedure is adopted must vary with the conditions present at the operation.

It is the opinion of certain experts in tropical diseases that dysentery only becomes chronic in those affected by intestinal stasis, and it has been demonstrated by Mr. J. W. Jackson in a most interesting communication[4] that chronic amœbic dysentery can be frequently cured by freeing the intestine from obstruction by band or controlling appendix.

Operative Interference in the Group Characterised by Absence of Bands.

In the second type of static colon the mechanical difficulties are, first, the elongated pelvic colon, and, second, the obstruction consequent on the spasm of the muscle coat of the bowel produced by the inflammation of its mucous lining. The symptoms which call for operation in this type are not due so much to the pain and constipation or diarrhœa but to the auto-intoxication which is the result of infection of the contents of the small intestine, which produces most serious degenerative processes in every tissue in the body and renders the subject liable to infection by other diseases, as rheumatoid arthritis, tubercle, &c.

It would seem that the simplest operative procedure would be to excise the surplus pelvic colon and to restore it to its normal length; such a measure is beneficial in certain circumstances, but in the majority of cases the best results can be obtained by a colectomy or by dividing the ileum and putting it into the pelvic colon, subsequently taking the precautions to secure the frequent evacuation of the pelvic colon which have already been indicated. Needless to say, no operation should be considered till every medical means have been taken to overcome the constipation, to allay the spasm of the muscle of the bowel by curing the colitis, and to free the ileal effluent.

I have described the operations of ileo-colostomy and of colectomy so frequently that it is unnecessary to repeat the descriptions again in detail. I would merely point out that in this type, as opposed to the other, colectomy is rendered very easy because of the prolapse and elongation of the colon and by the absence of any retaining membranes.

A complication of the elongated large bowel which increases the obstacle to the passage of its contents is a twist. It is usually chronic but owing to the abrupt exaggeration of the twist it may become acute and produce a volvulus. In certain cases I have excised the volvulus and in others I have performed a colectomy. The same treatment applies equally to the congenital enlargement of the colon, sometimes called megacolon. As regards ulcerative colitis, when medical treatment has failed to cure the condition, the only operation which has been of any real service in my experience has been a colectomy. This I have performed with complete success very early in childhood. Even after a colectomy prolonged local and vaccine treatment for a considerable period is usually called for, to get rid of the residual ulceration which so often exists in the rectum and in the portion of pelvic colon which has necessarily been left in the body. Much the same operative treatment applies to severe cases of mucous and membranous colitis, but it is resorted to much less frequently. Before leaving the subject of these operative procedures I would urge the importance of attempting to avoid the sequence of conditions which result from stasis and which produce so much misery and death. Cancer is the final stage in the sequence of chronic intestinal stasis. It is the last chapter in the story of defective drainage of the large bowel as it is in the rest of the gastro-intestinal tract. Its treatment has been excluded from consideration in this discussion. Another effect of infection of the badly drained colon is inflammation of the appendix. On the treatment of this complication we are in general agreement.

I cannot impress on you too strongly Colonel R. McCarrison's experience in India. He spent nine years in the Himalayas, during which time he had a large

[3] Reflections on the Evolution of Disease, THE LANCET, Dec. 20th, 1919. Cancer of the Colon: its Causation and Treatment, THE LANCET, Dec. 11th, 1920.

[4] Medical Press and Circular, May 3rd, 1922.

practice, performing more than 400 capital operations each year. During that time he never saw one case of asthenic dyspepsia, of gastric or duodenal ulcer, of appendicitis, of mucous colitis, or of cancer—all evidences of chronic intestinal stasis in their normal sequence. I have obtained precisely similar evidence from other very experienced medical men who have been engaged in practice for many years among the primitive races. It is clearly our duty not so much to devise new operations as to attempt to prevent the diseases for which so many operations are done. This is the biggest problem before the profession at the present moment, and it is one that must be solved.

THE TREATMENT OF ACUTE OBSTRUCTION FROM CANCER OF THE COLON.

BY J. P. LOCKHART-MUMMERY, F.R.C.S. ENG.,
SENIOR SURGEON, ST. MARK'S HOSPITAL FOR DISEASES OF THE RECTUM, LONDON, E.C.

IT is now a well-recognised surgical principle that no attempt should be made to resect the bowel when obstruction is present, and that the proper treatment when acute obstruction exists is to be content with draining the bowel by the establishment of an artificial opening, the removal of the cause of the obstruction being deferred till later, when the patient has recovered from the acute symptoms. While this is now the more or less general practice, most surgeons still start by doing an exploratory laparotomy, presumably with a view of finding the cause before attempting to deal with the obstruction. This often results in the surgeon getting into difficulties owing to the distended coils of bowel, which are liable to escape from the wound and be difficult to replace, and to the danger of the bowel splitting from the tension. Few operations, in fact, give rise to such serious difficulties as an exploratory laparotomy on a patient with acute obstruction of the colon.

It seems to me that there is no necessity for, or object in, the performance of an exploratory laparotomy at all in the acute stage, and that a much better plan is simply to drain the cæcum and leave the exploration till the patient has recovered from the obstruction, when a resection of the growth can be performed with reasonable safety. It is generally admitted that cæcostomy is the best method of dealing with an obstructed colon; it can be performed through a small incision with none of the risks attached to an exploratory operation. Moreover, the presence of a cæcal fistula will render any subsequent resection of the colon much safer, and the opening is as far as possible away from the situation of the exploratory wound in the abdominal wall, assuming that this is, as usual, on the left side of the abdomen. The only objections that have been urged against a cæcostomy as opposed to a colostomy in these cases are that owing to the liquid nature of the contents of the cæcum such openings are difficult to control and may be difficult to close.

The following method which I have been using lately appears to overcome both these difficulties. A small incision is made over the cæcum and a knuckle of the cæcal wall drawn out and protected with gauze swabs. A hole is made in the cæcal wall with a knife, and a rubber drainage-tube about half an inch in diameter is pushed into the cæcum for two inches. The tube is then stitched to the cæcal wall with catgut, each stitch going through the wall of the tube and picking up the cæcal wall half an inch away from the tube. When these are tied a cuff of cæcal wall will have been turned in. A purse-string suture is now inserted well away from the tube and tied so as to turn in more of the cæcal wall. The ends of the suture, after being tied, are brought through the deep fascia and peritoneum, and one or two other sutures placed so as to fix the cæcum at the point at which the tube enters to the deep surface of the abdominal wall. The abdomen is then sewn up around the tube. A wide collapsible rubber tube is tied on to the end of the rubber drainage-tube projecting from the dressings, and is carried over into a pail under the bed. The tube remains quite water-tight and gas-tight for as long as a week, and as the contents of the cæcum are liquid they drain quite readily through a tube of this size; no leakage takes place in the wound and the patient can be kept dry and comfortable.

After the obstruction has been relieved, and when the patient has lost all signs of toxæmia—which will generally be in about five or six days—the abdomen can be opened in the mid-line, or on the left side, and the cause of the obstruction ascertained and dealt with under the most favourable circumstances. The presence of a cæcostomy renders any such operation as resection of part of the colon much easier and safer, and the absence of toxæmia and distension greatly reduces the risks. When the tube in the cæcum becomes loose, which is usually in about eight or nine days, it may be removed, and as a rule there will

Diagram to show method of inserting stitches in performing cæcostomy.

only be slight leakage for a few days, assuming that the original obstruction has been removed, or that a colostomy has been done above it.

I have never known an opening made in this way fail to close spontaneously in a week or ten days, and most of them have not leaked after the tube has come away. I believe this to be a much safer method of dealing with cases of acute obstruction of the large bowel than exploration of the abdomen, and I think it is the right method when one can be reasonably sure that the obstruction is due to a growth. In sudden obstruction, without any previous history, one would not be able, as a rule, to exclude a volvulus, and exploration is called for, but in many cases one can be reasonably sure that volvulus or hernia is not the causal agent; in such instances a cæcostomy without exploration of the abdomen will save more lives than are likely to be lost by the missing of some obscure hernia of the colon.

If, at the operation, the cæcum is not found to be distended exploration is, of course, called for as the obstruction must be in the small gut. Chronic intussusception in an adult might be confused with a growth in the colon, but this is not likely if the history of the case is known, and further cæcostomy will, in most cases, by relieving the obstruction, prevent gangrene of the intussusception, so that the treatment would be effectual.

A NOTE ON RECUPERATIVE RAY BATHS.

BY EDWARD JAMES DECK, M.R.C.S. ENG.

I SHOULD like to draw attention to the beneficial results to be obtained by exposing the whole body to multiple arcs giving forth rays in which the ultra violet predominates. The method of producing this rich volume of rays is the electrical combustion of practically pure electrodes, containing 99 per cent. of tungsten.

The cases I have selected to demonstrate the value of this treatment are, I think, appropriate because of their severity, each case having been definitely diagnosed as malignant disease, attended with a marked degree of anæmia besides other general

symptoms of debility. I have divided the cases into three groups, viz.: (1) before irradiation by the Erlangen method; (2) post-operative, but before irradiation; (3) post-operative and after irradiation. In all three groups the result has been equally successful as shown by the rapid increase of red blood cells.

Before Irradiation.

CASE 1.—Male, aged 46; inoperable growth. Blood count before treatment: r.b.c., 1,010,000. Progressive weekly counts during treatment: r.b.c., 2,735,000, 2,230,000, 3,160,000, 3,830,000, 4,360,000. After irradiation: r.b.c., 3,960,000. After further recuperative treatment: r.b.c., 4,160,000.

Comments.—This case is especially interesting, seeing that the growth was inoperable and the patient's condition so low that deep X ray therapy for the time being was also impossible. Further, the patient had undergone an extensive course of medical treatment, including the exhibition of arsenic and iron, with no beneficial results. Incidentally a bad bedsore healed at the end of his first ten days' treatment, and at the end of his treatment he was able to walk without aid. The growth remained unchanged during recuperative treatment, but the patient had less pain.

Post Operative but Before Irradiation.

CASE 2.—Female, aged 35; growth removed from breast. *Stage 1:* Post-operative blood count: r.b.c., 4,020,000; post-recuperative treatment: r.b.c., 4,420,000; w.b.c. normal. *Stage 2:* After irradiation: r.b.c., 4,210,000; post-recuperative treatment: r.b.c., 5,300,000; w.b.c. normal. Total number of treatments: Stage 1, 6; time, 18 min. Stage 2, 9; time, 54 min. Total, 72 min. Hæmoglobin increased from 60 to 67 per cent.

Comments.—The condition of this patient after operation and before her deep X ray treatment was one of extreme nervous and general debility. Appetite very poor and nutrition bad. After recuperative treatment she gained weight, lost all traces of nervousness, and expressed herself as "feeling perfectly well and able to do all her usual household duties."

Post Operative and After Irradiation.

CASE 3.—Female, aged 37; growth removed from breast.

Blood count after operation and deep rays: r.b.c., 4,790,000; after recuperative treatment: r.b.c., 5,000,000. Number of treatments, 6. Total time of exposure, 30 min. Hæmoglobin percentage unchanged.

Comments.—This case is mainly interesting in showing the speedy return to normal, where the depletion of red blood cells is comparatively small and the general condition of the patient fairly good.

CASE 4.—Female, aged 57; growth removed from breast.

First blood count, r.b.c., 4,500,000; after recuperative treatment, r.b.c., 5,200,000. Number of treatments, 14. Total time of exposure, 56 min. Hæmoglobin increased from 84 to 90 per cent.

Comments.—Points of interest in this case were the age of the patient, and her very debilitated general condition to commence with.

Conclusions.

It would seem from the foregoing cases reasonable to form the following deductions:—

1. That this method of treatment may be beneficial in wasting diseases attended with anæmia.

2. That in it we may possess a rapid aid to healing for chronic ulcerations, such as bedsores and varicose ulcers.

3. That in the case of malignant disease there is no risk of aggravating the condition by the treatment or of doing the patient harm in any other way.

Other cases in which treatment by this method has proved beneficial include rheumatoid arthritis, neurasthenia, simple anæmias, many skin diseases, and rickets.

In publishing these notes my thanks are due to Dr. E. R. Morton, Dr. H. Carlill, and Dr. H. B. Lee for allowing me to report cases under their care, also to Mr. W. G. Moore, the designer of the apparatus.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SECTION OF THERAPEUTICS AND PHARMACOLOGY.

THE PHYSIOLOGICAL ACTION OF LIGHT.

A MEETING of this section of the Royal Society of Medicine was held on Nov. 14th, with Dr. W. LANGDON BROWN, the President, in the chair.

Sir WILLIAM BAYLISS opened a discussion on the physiological action of light. He proposed to confine himself to some general considerations. He reminded those present of Grotthus's law that light can produce no effect unless it is absorbed. The expression "photo-katalytic effect" was not a correct one, since a katalyst affords no energy, whereas in all reactions set going by light energy is imparted, sometimes in large amounts, as in the chemical activities of green leaves. Light, while imparting energy, might, indeed, produce some substance that acts as a katalyst. Sometimes energy is required just to start a reaction. Sir William Bayliss gave an instance of the small amount of energy needed to liberate a large amount. A billiard ball in the concavity of a clock glass on a tripod stand would fall to the table if for some reason the glass disappeared, liberating a considerable amount of energy. The same amount of energy could be liberated by the application of a very small quantity of energy, just enough to push the ball over the concave edge of the glass. The lethal effect of certain light rays were mainly local in nature, and not so difficult to understand as the remedial or distal effects. Effects of light might either be expressed as photo-chemical change or formation of an active substance, or, as was now customary, as photo-electrical—that is, in terms of emission of electrons. In the present state of knowledge it was perhaps more useful to regard these effects from the photo-chemical aspect. It was clear from clinical observations on rickets and tuberculosis that light must produce some substance which eventually passes to the blood. Assuming that a definite substance was produced, the problem arose, where it was produced; if in the skin, in what layer; how it was produced, and what particular wave-length of light was active. It was also important to ascertain whether the pigment in the skin acts as a sensitiser by absorbing certain wave-lengths of light. Dr. A. Rollier at Leysin had observed that patients undergoing sun cure who did not pigment readily did less well than others. On the other hand, A. V. Hess found that light from the carbon arc, which does not brown the skin, was as effective in curing rickets as ultra-violet rays. Hess also showed that black rats suffering from rickets were less easily cured by light than white ones. The negro was more susceptible to rickets than the white man. The nature of the product formed after exposure to light rays was still in doubt. Prof. A. Harden had suggested that possibly vitamin A was produced, since the formation of this substance appeared to be closely related to photo-synthesis in the plant, and vitamin A is well known to cure rickets. Recent work by Miss K. Coward with carotin suggested that this yellow pigment might play a part in the reaction, since the yellow parts of flowers appear to be effective in replacing vitamin A in so far as this vitamin is a necessary factor in the growth of rats. Was it carotin that acted as photo-sensitiser? Hess had discovered that by feeding an animal on carotin it could be made hypersensitive to light. Theoretically, the problem whether vitamin A is replaceable by light should be easily soluble by means of experiments in which the cure of rickets in animals on a diet deficient in vitamin A is attempted by subjecting them to light without change of diet. A practical difficulty was that of getting food quite free from vitamin A, which could certainly be partially replaced by light. Attempts to cure rickets in dogs by feeding with excess of vitamin A in the absence of

light were unsuccessful. It therefore remained doubtful at present whether either vitamin A or light alone sufficed to cure rickets. A new complication had been recently introduced by E. V. McCollum, whose work appeared to show that the rickets factor was not vitamin A but a new vitamin, for which he suggested the name vitamin D. Another theory that had been advanced was whether the therapeutic action of light might be due to heat produced locally by absorption of the rays of long wave-lengths. Sonne, at the Finsen Institute, had done interesting work in this connexion. This local production of heat might speed up certain changes, but must be differentiated from the harmful raising of the general body temperature. A cool atmosphere was of therapeutic value, and perhaps this was what made Alpine air or sea bathing so beneficial.

Dr. LEONARD HILL enumerated some experiments recently performed in the department of applied physiology at the National Institute of Medical Research by Dr. Arthur Webster. When blood was injected into animals after having been exposed to light, no toxic effect was noticeable, even when the blood was mixed with eosin or with skin. Neither muscle nor skin had a toxic effect when injected after exposure to light. Further experiments had shown that the phosphorus contained in the blood was not affected by this treatment, nor was the opsonic index of the subject of the experiment changed when a certain quantity of blood was exposed to light and re-injected intravenously. As to the immune power of the blood, some slight rise of antigenic power had been noticed by Webster and Sonne, but this was not sufficient to be very convincing. Sonne had exposed guinea-pigs to arc light, and these had developed increased resistance to the diphtheria toxin. The glutathione reaction given by fresh tissue was not altered by light. This side of research had, then, been mainly negative. As to pigment, the effect of pigment was to make the skin apparently thinner. Various experiments had been made to test the action of light under different conditions. Limbs covered with a rubber surface in which holes had been punched were exposed to light through glass, through water, and dry, on the East Coast of England. Pigmentation took place very imperfectly through glass, and not so well on surfaces exposed to wind as on those protected. It took place best on surfaces kept damp. The metabolism of children whose bodies were exposed to light and air as a therapeutic measure was put up by 50 to 100 per cent., and to the same extent in red-skinned as in dark, pigmented children. Exposure to the sun enabled children to stand a katathermometer reading of 10, whereas 6 was the standard set by Dr. Hill. A large part of the cure consisted in the effect of cooling power on metabolism, and this must not be lost sight of. As to rickets in rats, on the diet used by Hess 100 per cent. of rats got bone changes typical of rickets in 28 days. It had been found by Hess, and confirmed by Dr. Harriette Chick in Vienna, that rickety changes in animals and in children could be stopped (though growth might not be improved), and eyes kept free from xerophthalmia, by exposure to light without change of diet. The problem was not simple. Dr. Argyll Campbell had found rickets prevalent in Singapore and in India, in spite of the sunny climate—possibly the effect of high temperature cancelled that of sunlight; rickets was more pronounced in dry heat. Light had a profound protective effect. Ten minutes to half an hour exposure to a mercury-vapour lamp, which had been said to cure anæmia in dogs, had no effect on rats as far as had been ascertained up to now. Dr. Hill pointed out that in spite of recent research on the value of light it was extraordinary how people, especially the lower classes, shut themselves away from air and sunlight.

The Effect of Pigmentation on Prognosis.

Sir HENRY GAUVAIN showed many lantern slides of children under treatment at Alton and at Hayling Island for surgical tuberculosis. He admitted that cases of surgical tuberculosis could be cured without light, but they did better when light was used. It was difficult to assign the exact part played by sunlight in the cure of cases under his care, since all methods, not light alone, were used in their treatment. It was his experience that children who freckled and did not pigment well took longer to be cured. It was curious that some children who did not pigment, and thus could not stand exposure to sun, often tended to develop a new tuberculous lesion; occasionally when this was fully developed they acquired pigmenting power, greater muscular development, and appeared to do much better. He laid stress on the analgesic effect of sunlight.

Prof. C. J. MARTIN considered that the recent proof that light had an important effect in preventing and curing lesions was of the utmost importance. The essential pathology of rickets was the interference with the mechanism of laying down calcium phosphate in the skeleton. This condition could be produced experimentally by a diet which must be so modified that the calcium and phosphorus administered were insufficient, and that some substance present in animal fat was diminished in quantity. The geographical distribution of rickets had attracted attention for some years, and as long ago as 1890 it had been associated by observers with the distribution of sunlight. More recently seasonal distribution had received attention, though it had long been known that rickets was more common in the spring. Rosinsky in 1912 interpreted this fact as being due to sunlight, and offered some experimental evidence in support of his conclusion. Of two puppies, both fed by a bitch, one was kept in the dark and one in the sun. On killing the puppies at the age of 6 months the calcium oxide in the skeleton of the former amounted to 1 g., and in the other to 1·6 g. In 1909 Ulogitsky irradiated animals suffering from rickets with a quartz lamp, with an excellent general effect. These results were soon confirmed in Germany and in America by Hess and since then by Dr. Chick and Dr. Elsie Dalyell in Vienna. In the summer time it did not matter whether rickety children were given cod-liver oil or not, both batches of children did equally well, whereas in the winter cod-liver oil appeared to be essential. These clinical observations had been confirmed experimentally by McCollum and Hess. It was not yet certain how light operated. It might be by a photo-chemical action in the superficial tissues, or something might happen to the air. Kessler had explained the advantage of high climates on the latter basis. Sir William Bayliss had raised the question whether light caused synthesis of the anti-rachitic factor. This was not easy to estimate, but on the question whether it could manufacture vitamin A, experiments by Dr. H. Goldblatt had given a negative answer. It could apparently not synthetise vitamin A, but could help in economising the supply thereof.

Dr. DALYELL showed slides of bones in 7 months infants, rachitic and normal, and showed that as far as skeletal changes went, exposure to a mercury-vapour lamp at 100 cm. and later on at 70 cm. for five minutes, ten minutes, gradually increasing up to four and a half hours, cured rickets in such infants in two months, though the children were not taken out of doors throughout the period.

Dr. H. GOLDBLATT discussed the relation of the action of light to the synthesis of vitamin A. The problem was (1) whether synthesis of vitamin A occurred, (2) whether vitamin A could be replaced by light, (3) whether light acted on already stored vitamin A. Litters were divided into two groups, of which both were kept in the dark and on deficient diet by himself and Miss K. Soames in this country, and by Miss M. Hume in Vienna. The litter subjected to ten minutes' radiation a day grew more quickly and ate better and looked better than the others, but their growth ceased in time. Another set of rats were not irradiated till growth had stopped, after which in spite of radiation they did not do very well. The obvious conclusion was that no synthesis occurred, and that the effect of light must be in economising the vitamin A already stored in the body.

Dr. J. TREVAN read a paper by himself and Miss E. BOOCK on

The Effect of Light on the Responses of Frogs to Drugs.

In work on the standardisation of tincture of digitalis it was found that yellow frogs were more sensitive to the drug than dark grey or black frogs. The work of Lancelot Hogben on alteration of the colour of the frog caused by pituitary and adrenalin extracts led to some experimental work with a view to investigating the susceptibility of the frog to tincture of digitalis. It was found that animals exposed to light which became light in colour died after the injection of 0·4 c.cm. of the B.P. 1914 tincture, whereas the dark ones were only killed by 0·6 c.cm. Frogs made yellow by injection of pituitrin were also more susceptible to digitalis than those turned dark by adrenalin, showing that it was not merely an absorption effect. Dr. Trevan suggested that the survival of some such mechanism as produced colour change in frogs might be the explanation of the effect of pigment in man.

Dr. W. CRAMER suggested that light might work as a stimulant to living protoplasm. Vitamin deficiency produced the same effect as radiation from X rays and radium. Exposure to X rays or radium in moderate doses caused a lymphopænia, which was also caused by B-vitamin deficiency, and in large doses a diminished platelet count, which was also noticeable in conditions of A-vitamin deficiency. A very small dose of X ray produced an initial lymphocytosis, and a very small dose had been used in an attempt to stimulate the production of blood platelets by Dr. J. C. Mottram and himself. In normal rats small doses had increased the platelets at first; subsequently, the treatment having been continued, the platelets had dropped, whereas when larger doses were administered the platelets diminished in number steadily from the beginning. Dr. Cramer quoted experiments on rats which suggested that the effect of light might be physiological—the stimulation of that part of the organism which was responsible for the formation of platelets.

SECTION OF OPHTHALMOLOGY.

EXHIBITION OF CASES AND SPECIMENS.

A CLINICAL meeting of this section of the Royal Society of Medicine was held on Nov. 10th, Mr. A. L. WHITEHEAD, the President, occupying the chair.

Calcareous Dislocated Lenses.—Retinitis Circinata.

Mr. HUMPHREY NEAME showed two calcareous lenses which had become dislocated into the anterior chamber. In each of the cases there had been a trauma many years ago, when, presumably, the dislocation occurred, and in course of time there were calcareous deposits in the lens.

Mr. NEAME also showed a man, aged 39, the subject of retinitis circinata, which condition had developed while the patient was under observation. First, a hæmorrhage of the area of two discs appeared; three months later there was a swelling above this hæmorrhage. Then the swelling took on a grey-white colour, and a month later still there was a delicate deposit composed of many very fine white points. These afterwards coalesced and gave the appearance now presented. As to the nature of the swelling above the macula, three possibilities were thought of; that it was: (1) inflammatory, (2) a neoplasm, (3) a cyst. Neoplasm seemed to be negatived by the fact that the appearance had remained unchanged three months. Thinking it might be inflammatory, injections of tuberculin were given, but no local or temperature reaction occurred. Wassermann was negative, and there was neither history nor evidence of syphilis. He inclined to regard it as a cyst of the retina.—Mr. MALCOLM HEPBURN said many cases of so-called retinitis circinata originated in the choroid, and the deposits were always more intense at the macula.—Sir WILLIAM LISTER related the case of a man who received a blow on the eye and later had a large subretinal hæmorrhage in the region of the macula. When this was absorbed, a large choroidal rupture was seen. He believed a low form of infection was operative in retinitis circinata.—Mr. LESLIE PATON reminded the section that the case of retinitis circinata recently shown by Mr. Williamson-Noble proved positive to the complement-fixation test for tubercle. The lesions in the present case might be tuberculous.—The PRESIDENT likewise thought it probable that the lesions in this case were tuberculous; also that the same disease was responsible for spontaneous hæmorrhages.

Congenital Dislocation of Lenses.

Mr. MONTAGUE HINE showed a boy, aged 6 years, with congenital dislocation of lenses, and asked advice as to what he ought to do; also as to what was the ultimate end of such cases.—The PRESIDENT said he had operated on two or three such cases by fixing the lens with one needle and breaking it up with another. The lens operation was successful, but the vision was always subnormal, possibly because of some congenital amblyopia.—Mr. LEIGHTON DAVIES said the decision whether or not to operate should largely depend on whether the edge of the dislocated lens lay outside the pupillary area when the pupil was contracted. If it came just to the pupil, the case was better left alone. Needling was better than extraction in a young child.

Cavernous Angioma of Orbit.—Recurrent Retinal Detachment after Reposition.

Mr. LESLIE PATON showed a patient, aged 76, from whom a large cavernous angioma of the orbit had been removed. She showed no trace of anything wrong until past her seventieth year. The growth, which was the size of a walnut, was completely encapsuled, and was easily shelled out, without subsequent bleeding. Earlier in life the patient had sustained a fracture in the upper margin of the orbit, and that might have been connected with the later occurrence of the angioma.

Mr. PATON showed also a man who had a detachment of the retina in 1904. Reposition occurred, and the man had been engaged in carrying newspapers through the London streets on a bicycle. He had a relapse 11 months ago. The refraction of the eye involved was normal.—Sir RICHARD CRUISE related the particulars of a case of his own which had re-attachment of the retina after it had been detached for a period of about 12 years. As no shrinking had occurred, there was a readjustment of the retina to the concavity of the sclera. This eye also had normal refraction.

Case of Bilateral Proptosis.

Mr. AFFLECK GREEVES showed a man, aged 37, who had proptosis which commenced a year ago in one eye, and five months ago in the other, so that the condition was now bilateral. His chief trouble was double vision, especially when looking in an upward direction. The man had tremor of the hands, but neither tachycardia nor enlarged thyroid, therefore he did not regard it as a case of Graves's disease.—The PRESIDENT and Mr. R. L. REA, however, thought the man probably was the subject of Graves's disease.

New Plastic Operation for Contracted Socket.

Mr. M. OLIVER showed a patient on whom he had operated by a modification of the old method of treating a contracted socket by epithelial inlay, enabling an artificial eye to be worn without discomfort. By the old method there was a liability to re-contraction, whatever might be done, and a continuing discharge. In all these cases his custom now was to remove the whole of the conjunctiva, including that of the lids themselves. This method was also applicable to cases of exenteration of the orbit; there was no need to remove the lids.—The PRESIDENT congratulated Mr. Oliver on the results he achieved.

Macular Degeneration and Mental Deficiency.

Mr. FRANK JULER showed a girl, aged 15, the subject of this combined condition. In both eyes the disease seemed to have started in the macular region. There was no sign of syphilis in the child, but in two

confinements the mother gave birth to one premature child, and of the other the child died in 14 days. Mental defect was evident at school before the vision became bad, and at the blind school she was now attending she was very slow in learning. There was no parental consanguinity.

Mr. REA showed a case of ruptured ligamentum pectinatum; also one of gummatous exudation at the base of the brain, optic neuritis, and diplopia.

HARVEIAN SOCIETY.

THE PROBLEMS OF PROSTATECTOMY.

A MEETING of this Society was held on Nov. 16th, with Sir WILLIAM WILLCOX, the President, in the chair, when a paper was read by Sir JOHN THOMSON WALKER on the Problems of Prostatectomy. He said it was not sufficiently understood that many complications which followed prostatectomy were avoidable by treatment before operation.

Bowel Complications.

Post-operative distension of the bowel might occur in all degrees, from slight flatulent distension with difficulty in getting the bowels open, to prolonged and severe distension. He believed that two elements entered into its causation: (1) flatulent distension of the bowel from intestinal fermentation; (2) exhaustion of the sympathetic nervous system as a result of uræmia, intestinal toxæmia, or shock. Two different types of patient were specially liable to this condition. The thin man, aged about 60, with a sallow complexion who suffered generally from flatulent indigestion after meals might have dental caries and pyorrhœa and a coated tongue. The other type was a stout, flabby man of 50 or 60, often a Jew, immoderately fond of rich, fatty foods, and had a prominent rounded and tense abdomen, but whose mouth was in good order.

Preliminary Treatment.

Careful preliminary treatment for four or five weeks might, however, prevent intestinal complications. Oral sepsis should be treated by a dentist, and flatulent dyspepsia, should also receive attention. Sir John Thomson Walker had found the most successful line of treatment to be the restriction of starchy foods and green vegetables, the administration of bowel antiseptics, and tonics, and the avoidance of saline purgatives. Abdominal massage and electrical treatment of the bowel were also useful, but should not be employed when the bladder was distended with residual urine. For patients who did not need special treatment, preparation for operation consisted in giving a dose of castor oil two nights before operation and washing out the colon on the morning of operation.

Post-Operative Treatment.

As a rule the bowel was left quiet for three or four days and then opened by a dose of castor oil, but if distension or vomiting of dark coffee-ground material occurred earlier a purge should be given at once. Dilatation of the stomach should be treated by gastric lavage; in the speaker's experience none of the operative procedures recommended for this condition held forth any prospect of success. The more common form of distension, where the colon was affected, should be treated with pituitary extract (½ c.cm. repeated in a few hours, the blood pressure being carefully watched), strychnine, or ergot, combined with the passage of a high rectal tube left in situ for several hours, and lavage of the colon. Enemata of soap and water, ox-gall and turpentine were also useful, but the latter should be carefully used in old and feeble patients. A stout patient should be made to lie on his side. Early and vigorous treatment before the patient became exhausted was essential.

Kidney Complications.

The most common and most frequently fatal complications, yet those most amenable to pre-operative treatment, were sepsis and renal inefficiency. True, chronic interstitial nephritis at the prostatic age rarely caused anxiety, although less amenable to treatment than that form which followed gradually increasing urinary obstruction. Clinical symptoms of nephritis were, however, occasionally deceptive and for over 20 years urinary surgeons had been in the habit of applying renal efficiency tests. The tests which the speaker employed were the "forced urea-elimination (urea-concentration)" test and the estimation of the blood-urea. He no longer employed dye tests except for kidney cases. In the urea-concentration test some regarded a figure of below 2 per cent. as an indication for a preliminary cystotomy, while above 2 per cent. a single stage prostatectomy was performed. Sir John Thomson Walker now performed single-stage prostatectomy on all cases where the urea concentration exceeded 1 per cent., provided there was no other contra-indication. As regards the blood-urea concentration a figure of 40 to 50 mg. per 1000 c.cm. was not to be regarded as excessive in patients of "prostatectomy" age; indeed, he had recently operated successfully upon an otherwise healthy patient whose figure had remained persistently at 58 mg. per 1000 c.cm. The two tests should be read together; a high blood-urea with a high urea-concentration figure was significant of an excessive urea-supply rather than of renal inadequacy; low results of both tests was an uncertain indication, but a low urea-concentration figure with a high blood-urea figure was a definite indication of renal impairment. No firm rule could be applied, however, for the renal function might be only temporarily depressed by removable causes. Further, there was a large reserve power in the kidney which no test had yet succeeded in estimating completely, although the forced urea-elimination test came nearest to doing so. It was not necessary for a successful prostatectomy that the renal efficiency should be even approximately perfect.

The Question of Two-Stage Operation.

The advocates of two-stage operation claimed for it the advantage of reduction of (1) shock, (2) hæmorrhage, (3) sepsis, and that by relief of back pressure time was allowed for the kidneys to recover their normal function. Its disadvantages were: (1) two operations and two anæsthetics; (2) increased time in hospital or home; (3) enucleation of prostate more difficult owing to rigidity of abdominal wall; (4) post-operative hernia more frequent. In a straightforward case a two-stage prostatectomy was certainly not safer; shock was not a factor of uncomplicated prostatectomy performed with skill. The speaker therefore performed one-stage prostatectomy as a routine and reserved two-stage prostatectomy for cases in which chronic urinary retention or sepsis was present or where catheterisation was difficult and some serious complication such as bronchitis or pneumonia was present.

Chronic urinary retention was a dangerous condition in which one-stage prostatectomy was often fatal, owing to the sudden fall in urinary pressure. Intermittent catheterisation followed by prostatectomy was also dangerous but less so. If possible, a catheter should be tied in and the urine drawn off very slowly before the preliminary cystotomy.

Sepsis, combined with uræmia from back pressure, was known as urinary septicæmia. In some cases the urinary infection was mainly in the bladder, but in others there was chronic septic pyelonephritis. Cystotomy should be performed, and continuous irrigation of the bladder through a tied-in catheter should be carried out for as long as necessary. Ten days of such irrigation would clear up uncomplicated cystitis and would cause considerable improvement even when moderate pyelonephritis was present, so eventually prostatectomy might be safely performed. Serious bilateral pyelonephritis gave a bad prognosis. The third indication for two-stage operation was when there was urgent necessity to relieve the bladder and some complication existed which made prostatectomy dangerous. In these, emptying of the bladder by catheter was often possible, and should be practised in preference to cystotomy.

Early Operation.

Frequent micturition in old men was too often looked upon as physiological; it was always the result of a pathological condition, although the changes in the prostate might not progress as far as to cause obstruction. The dangers of prostatectomy in a man of 80 were much greater than those in an average man of 60. Moreover, the duration of life of these patients must already have been shortened by the damage done before the removal of the obstruction. Sir John Thomson Walker therefore advocated early operation. If operation, he said, were only performed when the catheter failed, it was almost certain that infection would eventually occur which rendered the prognosis for operation infinitely worse. Further, in one type of prostatic case with chronic urinary retention (known as the silent prostate) nocturnal incontinence was the only urinary symptom, although examination revealed a greatly distended bladder. Many of these cases had exhibited frequency of micturition some years before; this symptom had disappeared and no others occurred until nocturnal incontinence appeared. These cases were most dangerous and difficult to treat. Again, malignant changes might take place in the prostate under conservative treatment. In some cases rectal examination revealed one firm, inelastic area in an enlarged prostate. In other cases malignancy was only detected by the pathologist after removal. The speaker regarded all cases of enlarged prostate causing sufficient obstruction to produce residual urine of one ounce or more on several examinations as requiring operation. In exceptional cases where a large elastic prostate did not produce residual urine, he also recommended operation, but not in those cases where frequency of micturition was the only symptom, where there was no residual urine, and no prominent enlargement of the prostate.

Type of Operation.

Freyer's operation was liable to certain defects such as (1) difficulties in connexion with the abdominal wall, (2) method of controlling hæmorrhage, (3) frequence and persistence of sepsis, and (4) post-operation urinary obstruction. The operation Sir John Thomson Walker preferred was performed as follows:—

A suprapubic incision sufficiently long to allow the right hand to pass completely within the muscular wall of the abdomen disposed of the difficulty of approach due to spasm of the recti and obviated the necessity for introducing the finger into the rectum. The skin on either side of the incision was undercut. The bladder was then opened and the prostate enucleated with the gloved forefinger and removed. The patient was then put into the Trendelenburg position and the Thomson Walker bladder retractor introduced by means of which a full view of the base of the bladder and prostatic bed was obtained. All tags, shreds, and semi-detached portions of capsule or prostate, &c., were carefully removed, and if an overhanging fold were found at the posterior lip of the opening a wedge of tissue was cut out of this. Hæmostatic stitches were then introduced on each side of the neck of the cavity and a continuous suture of fine catgut carried round the posterior edge. Hæmorrhage was usually controlled by these sutures, any spouting vessel seen was clamped and crushed. If venous bleeding were troublesome the prostatic cavity was carefully packed around the catheter with iodoform gauze. A rather smaller tube than that employed by Freyer was placed in the bladder, the retractor changed so as to separate only the recti, and the bladder wound closed up to the tube by a continuous suture. The prevesical space was drained by a small tube and the wound in the parietes closed.

The objects of this modification were: (1) to eliminate the difficulty of approach to the prostate, (2) to control bleeding, (3) to reduce sepsis, and (4) to prevent post-operative obstruction.

Sepsis.

Sepsis occurring during convalescence was generally due to infection with *B. coli*, either pure or mixed. One factor in its production was the finger in the rectum combined with the difficulty of approach due to a small abdominal wound. A second factor in the causation of sepsis after Freyer's operation was the presence of partly detached shreds of mucous membrane which formed a culture-ground for bacteria; in the open operation these were completely removed. If stagnant urine and blood-clot collected in the prostatic cavity and became infected through the tube from the skin, a catheter could be tied in the urethra with its eye in the prostatic cavity and the bladder washed through this catheter daily or continuously. As a routine measure a bag of boric acid crystals was placed in the Hamilton Irving suprapubic dressing and changed twice daily.

Persistence after operation of sepsis which was present before might be due to many causes, such as pyelitis, pyelonephritis, diverticulum of the bladder, and especially seminal vesiculitis.

Anæsthesia.

Pure ether anæsthesia was not suitable on account of post-operative lung complications, and with gas and oxygen a rigid abdominal wall was often present. He preferred spinal anæsthesia with a modified dose of stovaine combined with just sufficient chloroform and ether mixture to render the patient unconscious. The objection to this procedure was a fall of blood pressure amounting to 30–40 mm. of mercury; but this was usually compensated for when the patient was put into the Trendelenburg position. The horizontal position should be resumed slowly at the end of the operation to prevent too sudden a drop in the blood pressure. Local anæsthesia he had not found satisfactory, since pain was always felt during the enucleation of the deeper part of the prostate and the tearing of the urethra.

Discussion.

Mr. C. A. R. NITCH said that the problems of prostatectomy fell into three groups: (1) the selection of the case, (2) the type of operation, (3) the after-treatment.

1. *Selection of the Case.*—By the time patients usually sought advice, between the ages of 60 and 70, complications in the form of cystitis, pronounced frequency, occasional hæmaturia, retention, and so forth were usually present and rendered operation dangerous. Patients of 50 or thereabouts suffering from perineal discomfort, frequency, or cystitis should therefore be carefully examined and operation when necessary performed. Chronic lobular prostatitis with pronounced adenomata could be diagnosed early; the operation for its removal was comparatively easy and safe if performed early. Chronic interstitial prostatitis should be regarded as a precancerous condition. It was seldom recognised until well established, when there was often a severe degree of back-pressure, and the absence of a line of cleavage between the healthy and diseased tissue made operation difficult.

2. *Condition of the Patient.*—Renal function should be estimated before operation by clinical examination and by chemical tests. The tests he employed were: 1. The percentage of urea in the total amount of urine passed in 24 hours by a patient on an ordinary diet—this should be 1·5 per cent. or more. 2. The urea-concentration test. The figure given should rise from 2 per cent. in the second hour to 3 per cent. or over in the third hour specimen (which Mr. Nitch considered the more important). 3. The concentration of urea in the blood which normally ranged between 25–50 mg. per 100 c.cm. 4. The clinical signs, such as the degree of thirst, the appetite, the condition of the tongue, and the colour of the skin. These tests, taken in conjunction, gave a reliable indication of the ability of the patient to withstand operation. In his opinion a 1·7 per cent. urea concentration in the third hour and not more than 50 mg. of urea in 100 c.cm. of blood constituted the limits of safety provided the clinical conditions were satisfactory. If the clinical signs definitely indicated defective renal function, no chemical test should influence the surgeon in favour of operation; but he might operate even if the tests were a little below standard, provided the clinical picture was a good one.

3. *Type of Operation.*—The suprapubic operation usually employed was followed generally by excellent results, although it was an unsurgical procedure. The suprapubic approach was ideal for adenomatous prostate, for prostatitis, also when rapidity was essential, and after suprapubic drainage. He personally

preferred the two-stage operation as safer. Preliminary drainage by a suprapubic tube was preferable to the use of an indwelling catheter which was uncomfortable, irritated the urethra, and might cause epididymitis or even reflex anuria. Preliminary drainage, sometimes for long periods, was necessary when there was retention, hæmorrhage, more than two ounces of residual urine, cystitis, or renal deficiency. Sometimes this preliminary drainage had to be continued for nine months. A further advantage of this procedure was that the space of Retzius could be obliterated at the first operation and need not be reopened; the disadvantages were that the Thomson Walker operation became practically impossible. The prostate was difficult to reach and to enucleate, and the suprapubic fistula took longer to close. Though the perineal operation of Young had not found favour in this country, it appeared to Mr. Nitch to be suitable for early cases of prostatic hyperplasia in which a well-marked line of cleavage had not yet formed, for the fibrous prostate, and for cases of carcinoma considered to be operable.

Drainage.—As regards drainage, he preferred a modified Paul's glass colostomy tube with a length of rubber tubing attached, fixed in the bladder as in the bowel. This remained water-tight, and practically air-tight, for about five days. When leakage occurred it was replaced by a Hamilton Irving box. Irrigation was only necessary when sepsis was severe, and could be continuously carried on through a Macalpine tube or by means of a small tube passed to the bottom of the bladder through an air-tight opening. Patients with antecedent cystitis appeared to suffer less from post-operative sepsis probably owing to having developed some immunity. Immediate hæmorrhage was usually easily controllable by packing with adrenalin plugs. Secondary hæmorrhage was rare, but when it occurred was profuse; the control of sepsis in infected cases by preliminary drainage and the administration of an autogenous vaccine, and in clean cases by rigid asepsis and air-tight drainage, were prophylactic measures against secondary hæmorrhage. Of the last 50 cases operated on by Mr. Nitch 25 were subjected to a two-stage operation with one death (from pulmonary embolism). The remaining 25 were operated on by the Freyer method, with one death from pulmonary embolism and one from uræmia. He believed that had this last patient been operated on in two stages, death might not have occurred.

Mr. CLIFFORD MORSON, after pointing out how commonly the symptoms of enlargement of the prostate were regarded as the natural accompaniment of advancing age, proceeded to discuss the pathological changes which occurred in the gland. The view most generally accepted was that the enlargement was due to tumour formation of the adenomyomatous type. A few still held the theory that the process was one of senile degeneration, but this view was difficult to reconcile with the unfortunate abnormal sexual appetite manifested by the majority of these patients. Malignant changes occurred in the adenomatous prostate in 15–20 per cent. of all cases. The initial changes occurring in the bladder, ureter, and kidneys of prostatic cases were of mechanical origin; the later changes were brought about by tissue degeneration, which favoured infection. The exponents of catheter treatment failed to realise that the degenerative processes could not be arrested by the occasional withdrawal of residual urine, and by the use of the catheter infection of the urinary tract became inevitable. He gave cogent reasons for early operation. Contrasting the suprapubic with the perineal operation Mr. Morson referred to the complications peculiar to the latter: paralysis of the compressed urethræ and recto-urethral fistula. The main advantage claimed for the perineal route was the better drainage it provided. In discussing the modification of Freyer's operation, recently introduced by Sir John Thomson Walker, the speaker said that the arrest of hæmorrhage was not always an advantage when the blood pressure was high, and renal toxæmia was present. He personally permitted hæmorrhage from the prostatic cavity to continue in such cases, since it rarely persisted long or severely enough to produce collapse. An unfortunate complication following prostatectomy was the excessive formation of scar tissue in the prostatic cavity, resulting in a return of the urinary obstruction. Another late complication of prostatectomy which occurred in a large proportion of cases was epididymo-orchitis, sometimes so severe as to require orchidectomy. To prevent this he now divided both vasa differentia between ligatures. No atrophy of the testicle had ensued and infection of the testicle was prevented; the patient became sterile, but not impotent. In order to obtain adequate drainage in infected cases he kept a tube in the bladder for ten days or longer if necessary. Irrigation of the urethra was commenced on the day following operation and continued twice daily until the patient micturated normally. This provided bladder drainage from the suprapubic route as freely as in the perineal operation. In cases of renal failure a one-stage operation was generally agreed to be disastrous, for such cases the method of suprapubic drainage introduced by Mothersill and himself was the introduction of a De Pezzer tube. The operation was extremely simple and could be performed under local anæsthesia.

The bladder having been distended with 16 oz. of fluid, an incision about three-quarters of an inch long was made midway between the umbilicus and pubes and carried through the sheath of the rectus. A trocar and cannula, the latter fitting a No. 28 De Pezzer tube, were then plunged through the bladder wall. The trocar was removed and the tube, guided by a stilette, passed through the cannula into the bladder. The cannula was withdrawn, and then the stilette, leaving the tube in the bladder, where the mushroom-shaped end of the tube plugged the orifice securely. Since the aperture in the bladder was exactly equal to the size of the tube leakage did not occur. When the wound was healed a wooden stopper was inserted into the end of the tube, thus enabling the patient to get about in comfort.

Should the kidneys recover sufficiently, prostatectomy could be performed later, without the difficulty caused by scarring which followed suprapubic cystotomy.

Dr. G. ROCHE LYNCH discussed the tests of renal efficiency in common use. The usual dye test was phenol-sulphone-phthalein, 60–80 per cent. of which should be excreted in two hours by the normal kidney. The test had practical difficulties, since it involved the injection of exactly 1 c.cm. of the dye solution, an error of only two drops would cause a 10 per cent. variation in the result. Further, the test was irrational, since the kidney was called upon to excrete a substance not normally present in the body. The urea-concentration test of Maclean could be applied in the consulting-room and caused no discomfort to the patient. Prof. H. Maclean himself had performed ten thousand of these tests, so that it was now backed by considerable experience. The only objection to the test was the insufficient variation between the figures given by mild and severe cases of renal insufficiency. Dr. Lynch considered the urea content of the blood the most valuable of all tests. The diastase test gave very variable figures and appeared to be more dependent on the condition of the pancreas than on the state of the kidneys.

Dr. G. A. BARTON agreed in the main with Sir John Thomson Walker as to the choice of anæsthetic, but suggested that recurrent hæmorrhage was more likely to occur after spinal anæsthesia when the blood pressure rose again. He also considered a light chloroform anæsthesia (or even chloroform and ether) dangerous; pure ether properly administered was no more likely to be followed by bronchial troubles.

Prof. C. A. PANNETT offered a plea for the perineal operation, which he had performed on a few occasions, using a modified Young's technique with a satisfactory result. This method gave good exposure and hæmorrhage was easily controlled.

Mr. C. E. SHATTOCK emphasised the danger of emptying the bladder too rapidly in cases of chronic retention. His practise in these cases was to draw off the urine at the rate of six ounces per hour through a De Pezzer tube.

Dr. G. DE BEC TURTLE pointed out that the De Pezzer tube seemed to offer an excellent form of treatment for those unskilled in surgery who had to deal with retention cases in emergency.

The PRESIDENT said that in his experience prostatectomy was often followed by a tragic result. He had been struck by the care taken by the opener in the selection of the time of operation and in the method of performing it, which care could not fail to be rewarded by good results. Sir William Willcox had employed dye tests and had come to the conclusion that they were unreliable. He felt that catheter life for prostatic patients was equivalent to a death sentence.

Reply.

Sir JOHN THOMSON WALKER, in reply, said that after prostatectomy the seminal ducts opened into a hard-walled cavity above the sphincter, so that patients who had submitted to the operation were necessarily sterile though not impotent. The operation did not affect failing sexual power, but relieved the excessive appetite seen in some prostatic cases. As regards the question of malignancy of the enlarged prostate, he thought that different estimates were likely to be made by different pathologists, whose criteria of malignancy were subject to considerable variation. As regards the anæsthesia, he had so far had no trouble or anxiety with the light chloroform and ether anæsthesia he had described.

SOCIETY OF MEDICAL OFFICERS OF HEALTH.

A MEETING of this Society was held on Nov. 17th at 1, Upper Montague-street, London, W.C., Prof. T. EUSTACE HILL, the President, being in the chair, when 29 new members and associates were elected.

Prof. JOHN ROBERTSON (M.O.H., Birmingham) read a paper on

THE AMERICAN MILK-SUPPLY; ITS CONTROL AND DISTRIBUTION,

in which he gave the results of the recent visit to the United States which he had made for the purpose of investigating this matter. He had been accompanied by a representative of the dairy trade, and by the President of the Dairy Section of the National Farmers' Union. They were therefore representative of the producing and distributing industries as well as the official side, and Prof. Robertson's opportunities of getting a real insight into American methods were much increased on this account. He spoke with great appreciation of the kind reception which had been accorded him and the help which he has received in the investigation. He had visited the large towns of the New England States, and the central Bureau of Milk Control. He also saw the work of the best distributing firms, and went over many farms and "cooling stations," which is the name given to the town establishments where the milk is pasteurised and distributed. He was impressed by the size of the official staffs appointed for the supervision of the milk-supply. Prof. Robertson formed the opinion that the general milk-supply was definitely better than in this country. It gave a certain assurance of clean conditions of production, and of proper methods of distribution and handling. The American public could rely upon a milk which was richer in quality than ours, cleaner, of better keeping quality, and free from the risk of carrying infectious diseases or tuberculosis. The result of this had been that the American town dwellers had been induced to use an amount of milk much greater than the consumption in this country, and amounting to nearly a pint a day per head.

Before proceeding to speak of the main supply, which consisted of pasteurised and bottled milk, Prof. Robertson referred to a small section which was sold loose to bakers and such-like consumers, and to the "grade A certified" section, which amounted to from 5 to 12 per cent. in the towns visited. The latter was sold at about 28 cents per American quart, as compared with about 12 cents for the ordinary bottled supply. He did not think the grade A supply would hold the field in the face of the cheaper pasteurised milk. Although great care was taken by the tuberculin methods to eliminate the risk, yet there was no absolute guarantee that milk containing tubercle bacilli would at *no* time be produced, and accidents such as scarlatinal infection of the grade A supply had, in fact, happened. It was questionable whether one would be justified in giving to a baby even grade A milk in a raw state. People would come to rely more on the security afforded by the pasteurisation method. Prof. Robertson raised the point also whether the unnatural conditions under which the cows were kept in order to keep down the bacterial count—always stalled and never grass-fed—did not tend to an unhealthy state and to a low vitamin content for the milk.

The Pasteurised and Bottled Supply.

The great bulk of the milk was supplied in bottles after pasteurising and cooling, and was produced under reasonably good conditions. The speaker suggested that the habit of receiving milk in bottles had had a great deal to do with the good standard now prevailing in America. The consumer could see the amount of cream standing on the surface, and had come to demand a good fat-content and was willing to pay for it. This had encouraged the industry to breed a stock which gave high quality milk, and brought about the system whereby the farmers were paid for their milk on the basis of its fat-content. The ordinary rate of pay was on the basis of a content of 3·5 per cent. fat, and there was an adjustment of payment for every 0·5 per cent. above or below this. The extra money for the excess percentage of fat was sufficient in some cases to pay the whole rent of the farm. The sale in bottles had also encouraged cleanliness, because any dirt in the milk was likely to be very apparent.

Emphasis was laid on the following principles, in addition to payment on a fat basis, followed at the dairy farms:—

No vessel was used for milk without being sterilised. Every farm visited had a sterilising outfit. In the smaller ones it was a circular boiler, in a separate little house, whereby steam could be raised within half an hour of lighting up. Here all vessels, strainers, &c., were steamed, and a great point was made of letting the hot vessels dry before use. The churns were sterilised at the cooling stations in town, and not on the farms, where they arrived closed and dry. The churns were passed by means of a travelling platform into a kind of tunnel in which they were subjected in turn to jets of water, caustic soda solution, steam, and hot air, and from which they emerged hot and dry. The lids were treated in the same way, and bottles were similarly dealt with in open cases with bottoms made of open grating.

The milk was cooled immediately after milking. All the farms had facilities for this. In the north the large farms had big lakes or dammed reservoirs that afforded a natural supply of ice, which was cut and piled in large stacks. Little farms always had a natural spring, and cooled the milk by putting the churns in a trough of running water. By these means the milk was brought to a temperature between 50 and 60° F. In the south, brine refrigerators were used on the farms and the milk was kept in cold storage while waiting. Very large double-walled railway vans were used for transport, and in these great numbers of churns were closely packed, storeys deep, so that the cold milk would keep cool for long periods.

Great care was exercised in milking. The udders were cleansed and the milk received into covered vessels, which were of quite a cheap kind. Although nearly all farms kept milking machines, these were only for use in case of strikes, and were not ordinarily used. Except for certain modern model farms the cowsheds were no better than on English farms, and it was evident that good milk could be produced in old-fashioned byres—an important conclusion.

Pasteurisation.

The pasteurising was all done in the towns, and mostly in large establishments. Most of the milk in New York was handled by two firms, who had a number of such places. On arrival the milk was first tested by smell. Then a small sample was taken from each churn (about a dessertspoonful). The samples from each individual farmer were kept in one stoppered bottle, about one litre in size, with perchloride of mercury, and added to from day to day until the end of the month, when the whole was tested and so assessed on a fat-content basis. The milk in the churns was then weighed and passed into the pasteuriser. These were being improved from year to year, and the last word had not yet been said. The tendency was to discard the flash methods and the use of running tanks, and to adopt the method whereby the milk was held (still) in tanks for half an hour at a minimum temperature of 145° F. Many worked at 150–153°. It was found that if it rose above 165° the cream layer became less deep and looked less to the consumer. The milk was most carefully tended in the process, and the heating was done gradually, and by means of hot water and not by steam. It was afterwards cooled, first by water and then by refrigerated brine, and run at once into sterilised bottles, which were closed by a cardboard disc on which the day of the week was printed to prevent the sale of stale milk.

What was the effect of pasteurisation from the point of view of vitamins? It had been shown that there was probably no injury to the anti-rachitic (fat-soluble A) and anti-neuritic (water-soluble B). But the anti-scorbutic (water-soluble C) was much damaged, if not destroyed. But the speaker pointed out that raw cow's milk contained very little vitamin C, probably not enough for the infant, and that half a teaspoonful of orange juice once a week was more effective than all the vitamin C in a milk diet. In London at the present time nearly 75 per cent. of milk was pasteurised, but in an imperfect manner.

Conclusion.

In conclusion, Prof. Robertson dealt with the question of the price at which the good pasteurised milk-supply in America was produced. The present price was 50 per cent. above pre-war, but this was due to the general rise. Up to 1915 all the improved methods were in operation without any increase in the price of the milk, and he thought it could be done in this country without the price necessarily going up. In this connexion it was remarked that there were in Birmingham nearly 5000 registered distributors of milk, and that a great saving could be effected by the abolition of such overlapping. The improved American methods of dealing with surplus milk also tended to a lowering of price. Although the price of milk in America was nominally higher than in this country, yet, when the purchasing power of the dollar was taken into consideration, it was in effect lower. Finally, Prof. Robertson referred to the existence in the different American towns of organisations, promoted partly by the sanitary authorities and partly by the dairy interest, for the encouragement of an increase in the consumption of milk by the public, and said that it was doubtful whether it was advisable to follow this example in England until the quality of the milk-supply had been improved.

Discussion.

The PRESIDENT said that in England the average daily consumption of milk per head was only ¼ pint, according to a recent publication of the Ministry of Health, in contrast with the 1 pint of America. He questioned whether the system of payment by fat-content on the basis of sampling and analysis did not open the way to fraud. At the present moment the Ministry of Agriculture was taking active steps to induce education authorities to devote attention to instruction in the methods of pure milk production. The Ministry of Health was also alive to the importance of the problem. He considered that good modern byres were, in fact, very important, firstly from the point of view of the health of the cows, especially in regard to tuberculosis, and secondly because the workers were likely in their methods of cleanliness to live up to the standard of the byre. There was hardly any pasteurised milk sold in England outside the large towns.

Dr. T. EVANS (M.O.H., Swansea) asked whether the improvement in America was the result of education or legislative enactment, and what was the cost of the work at its inception, and the cost of the boilers, &c., at the farms. What bacteriological standards were adopted? He also questioned to what extent unsuitable purveyors of milk could be abolished under the provision of the new Milk and Dairies Act.

Prof. H. R. KENWOOD (University of London) said that 15 years ago he had prophesied a pasteurised and bottled supply in this country, and had recommended a certain firm to put such a supply on the market. This they had done, and without any increase in price, which was made possible in part by the adoption of one delivery a day instead of two. It was a flash pasteurisation at 170°. The effect on the cream line was commercially important. It was impossible to keep the milk at the required temperature for half an hour without multiplying holding tanks. He had found experimentally that running tanks allowed some of the milk to pass through almost immediately. He doubted whether the antiscorbutic vitamin was anything more than reduced by pasteurisation. Small changes in this respect could not be actually measured.

Dr. W. J. HOWARTH (M.O.H., City of London) suggested that the pasteurising method had been forced on the trade in America not by the action of health authorities, but as a measure of self-preservation. The absence of increase in price was due to the abolition of waste. One problem was how to prevent the milk being pasteurised over and over again. He doubted whether we had the right to assume that pasteurised milk was anything but damaged milk. In this country, except for the recent developments in connexion with the great towns, milk has only been transported over short distances and a fresh supply had always been successfully made. The American methods, and the similar procedure in connexion with our big towns, were the result of transport over great distances. He raised the point whether the farms seen by Prof. Robertson were under the influence of the two great New York firms, and whether their standards really exceeded those under the influence of the English milk combine. Dr. Howarth said he could not share Prof. Robertson's confidence in the pre-eminence of America's milk-supply. He hoped that so long as pasteurised milk is sold in this country it will be labelled as such, and receive no sort of commendatory recognition from the Ministry of Health. It had been found again and again that clean milk can be produced even from the dirtiest byres if a few elementary precautions were enforced. The people would need no urging to use milk in larger quantities when cheap supplies were available—it was purely a matter of price. He hoped that nothing would be done to drive the small milk producer out of business by excessive regulation of the trade.

Dr. W. BUTLER (London County Council) said that as long as he had been a member of the Society, medical officers of health had been consistent in their demand for a pure and unsophisticated milk supply, and he hoped that they would never be content with pasteurisation as a substitute. A clean milk could be safely consumed in the raw state, and even the percentage of tuberculous milk had been enormously reduced. As regards summer diarrhœa, pasteurisation was only a safeguard if conducted in the house of the consumer. He hoped this Society would never abate its demand for a milk initially clean and kept cool. When that was conceded we should have no need to consider the adoption of methods held to be necessary in America.

Dr. F. J. H. COUTTS said that, like previous speakers, his original instinct was to concentrate on securing

a clean raw milk. He had become convinced, however, that clean milk must always be expensive, and high prices meant small consumption. The success of dried milk, and its beneficial effects in infant feeding, had first led him to consider the possible advantages of pasteurisation. The fact noted by Prof. Robertson, that consumers in America watched the cream-content of their pasteurised milk, suggested that pasteurisation may indirectly lead to a demand for richer milk. When that happened farmers would be encouraged to breed for quality, as represented by fat-content, rather than for quantity as at present.

Dr. HERBERT JONES (M.O.H., Herefordshire Comb. Dist.) agreed with Dr. Butler that it would be deplorable if the public health service were content with anything less than their ideal of a clean raw milk produced by clean methods. As other speakers had pointed out, it was not yet established how the vitamins in milk were affected by pasteurisation, and meanwhile the process might be used to perpetuate uncleanly methods of milk production. —Dr. D. BRODERICK supported this view.

Replying to the discussion, Prof. ROBERTSON regretted that so few had the opportunity of visiting the United States to see what he had seen. He, himself, had set sail in the belief that clean raw milk was the only thing. But it had been proved to him in America that pasteurisation requires clean milk if it is to be successful. Whether we like it or not pasteurisation had come to stay, and one object must be to ensure efficient use of the process. The effect of pasteurisation on the reduction of infant mortality had been remarkable in America, and he believed that even the inefficient pasteurisation practised in England had been one of the great factors in saving infant lives during recent years. He was convinced that pasteurisation would mean a cleaner milk at the farm and a cleaner milk in the home. Not for 50 years could we hope to secure clean, safe supplies of raw milk from our farms and the general adoption of efficient pasteurisation would mean a great advance in the quality of milk available for consumers in this country.

On the proposal of Dr. HOWARTH, Prof. Robertson was given a cordial vote of thanks for his paper.

BATH CLINICAL SOCIETY.

Exhibition of Cases and Specimens.

A MEETING of this Society was held at the Royal United Hospital, Bath, on Nov. 3rd.

Mr. F. LACE showed a specimen of a neuroma of the plantar nerve removed from a case of intractable metatarsalgia which was cured by this procedure.

Dr. V. M. COATES showed two cases of dysentery, one of which showed an infection with bovine tubercle added to the dysenteric infection.

Mr. F. FRASER showed a case of painful foot with a calcanean spur; a case of epithelioma of the tongue and one of suppurative dacryocystitis cured by operation from the nose.

Dr. R. G. GORDON showed a case of congenital dislocation of the hip in a man of 66 and a case of infantilism in a girl aged 17½.

Mr. W. G. MUMFORD showed two cases of congenital dislocation of the hip in children.

Mr. J. S. LEVIS read a paper on the treatment of varicose ulcer, and described a method of treatment which he has found very satisfactory. This consists in (1) compresses of strong solution of sodium bicarbonate for a few days. (2) The limb is elevated for half to two hours, and painted from knee to toes regardless of the size of the ulcer with a solution of crystal violet and brilliant green 1–2 per cent. When the stain is thoroughly dry two to three ordinary three-inch bandages well soaked in Unna's paste are applied. This may have to be repeated two or three times in the first ten days, then every three weeks to three months. The last bandage should be worn six to twelve months.

Reviews and Notices of Books.

DISEASES OF CHILDREN.

A Practical Handbook on the Diseases of Children. For the use of Practitioners and Senior Students. By BERNARD MYERS, C.M.G., M.D. Edin., M.R.C.P. Lond., Physician to the Royal Waterloo Hospital for Children and Women, London. London: H. K. Lewis and Co., Ltd. With 61 illustrations. 1922. Pp. 548. 21*s*.

IN the preparation of this book Dr. Myers has had the assistance of several distinguished workers in special branches; thus Dr. Mackenzie Wallis has written on Biochemistry in Children's Diseases, Dr. John Eyre on the Use of Sera and Vaccines, and Mr. Montague Hopson on the Teeth. Throughout the text Dr. Myers acknowledges his debt to these and other authorities, and gives extensive references to recent publications in support of various views. The reader may sometimes wonder whether a more useful volume would not have been produced had Dr. Myers been content to write purely from his own experience, for in its present form the book, perhaps, is too obviously a compilation. The work which is being done at the Children's Clinic, to which the author is physician, is well known, and a useful table of measurements obtained there is given on pp. 18–19; similarly the figures given for the composition and modification of milk have been carefully prepared and will be found reliable.

It may be said in general that the chapters dealing with early infancy are better than those devoted to the diseases of older children; in this section, for example, a well-marked disease, such as acholuric jaundice, is given a cursory paragraph or two, and almost equal prominence given to such rarities as acute and subacute atrophy of the liver, and malignant tumours of the same organ. The article on acidosis in Chapter XVIII. is not very lucid, and those on diabetes insipidus and diabetes mellitus in the same chapter are written with so studious an evasion of dogmatism that the reader is left with little precise theory on which to base his practice; thus to say "it has been thought that the pituitary gland may play a part in its production," and that "the most suggestive treatment is by administration of small doses of extract of endocrine glands" seems rather vague help to the practitioner who opens a "practical handbook."

However, there can be no doubt that the practitioner and senior student will find much help from the volume. Of the illustrations some are excellent; the full value of certain others is lost owing to their small size.

The Physiological Feeding of Infants and Children. Fourth edition. By ERIC PRITCHARD, M.A., M.D. Oxf., M.R.C.P. Lond., Medical Director, Infants Hospital, London; Consulting Physician to the Queen's Hospital for Children. London: Henry Kimpton. 1922. Pp. 500. 21*s*.

THE high reputation which the author has gained by his lectures on infant feeding will be enhanced by the new edition of his book. Dr. Pritchard attacks his subject from a sound physiological standpoint, he sets out his facts with engaging directness, and he maintains an attitude of logical common sense that will appeal strongly to British readers. The basis of all his teaching is that human milk is the ideal, and that all other forms of food for infants should be approximated as closely as possible to that ideal; further, that having achieved this standard, the physician's remaining duty is to train the child for the ordeal of mixed feeding which faces it after the ninth month of life.

So many volumes are at present put on the market whose apparent scientific reasoning is, on examination, dependent more on the imaginings of the writer than on the conclusions of the biochemist, that many a perplexed practitioner and bewildered student will welcome Dr. Pritchard's dogmatism. A few breezy

words on p. 211 dismiss Finkelstein and the German school, and milk prescriptions (still popular in the United States) are less summarily, but equally effectively, disposed of. As to the preparation of dried milks, according to the methods advocated by the firms producing them, Dr. Pritchard becomes emphatic. "I quite admit," he says on p. 192, "that infants will survive on a diet of this kind, just as they will survive on a diet of whole milk fresh from the cow, but I deny altogether that they ever do really well." We can almost hear the deprecatory chorus of the crew of H.M.S. *Pinafore* chanting "What, never?"

The excellent chapters on the feeding of healthy infants are supplemented by numerous carefully prepared and useful charts of food composition and dietaries for children of all ages, and special chapters are devoted to difficulties such as the feeding of premature infants. The final portion of the book deals with the feeding of infants and children in conditions of illness, and here the reader will find the most stimulating article on rickets which we have encountered during recent years. Basing his views on J. Stheeman's work on the calcium content of the blood, Dr. Pritchard has succeeded in putting forward a working hypothesis which harmonises the various ideas which have recently added to the general knowledge and confusion. In an analogous way, in Chapter VI., he deals with acidosis in a manner which may be readily understood by all, and at the same time in no way runs contrary to the opinion of the biochemists. The author is less happy when dealing with disturbances of internal secretion; in Chapter IX. he accepts too readily the assumption that the "pancreatic hormone" is antagonistic to the adrenal, which seems the less excusable in that, when writing on diabetes, Dr. Pritchard ignores the mass of precise knowledge now attained concerning the relation of the pancreas to that malady.

Clear print and good paper contribute to make this a most attractive book.

INTOXICATIONS.

Nouveau traité de médecine. Fascicule VI. Intoxications. Publié sous la direction de G. H. ROGER, F. WIDAL, P. J. TEISSIER. Paris: Masson et Cie. 1922. With 23 figures in the text and 3 coloured plates. Pp. 506. Fr.35.

THIS volume, one of a series of 22 volumes which it is ultimately hoped to publish, is devoted to poisons. The editors have secured the assistance of some 147 collaborators for the complete series and of these 15 have written for the volume under review. A general introduction of 54 pages is contributed by Prof. Roger. He treats his subject from a broad point of view, and having considered the general action of exogenous and endogenous poisons, he proceeds to discuss the effect of these substances on individual organs. The section on relationship between chemical constitution and toxicity is of especial interest. Stress is laid on the importance of the glycogenic function of the liver in the elimination of certain poisons. The remainder of the volume may be regarded as a series of monographs on selected poisons rather than as a complete work, and it is from this point of view that we offer criticism. Some 48 poisonous substances, including chloral, cyanides, oxalates, phenol, and all the alkaloids, except cocaine, muscarine, and those of opium, are dismissed in 25 pages, whilst the monographs on alcohol and lead occupy 162 pages. Again, "intoxications" by tea and coffee take up seven pages, whilst the space allotted to strychnine is less than one page. Absinthe, veronal, and nitroglycerin, for example, are not mentioned and have, we feel, a claim prior to that of pyrogallic acid and copaiba.

The longer monographs, it may be granted, will well repay careful study, for they have been written by authors who have obviously had a wide experience. The sections on lead, cocaine, and the poisonous fungi are excellent. The note on lead poisoning by M. Pinard is a valuable contribution to science. The absorption of lead, although possible through the skin and lungs, is in his opinion far less important than its absorption through the alimentary canal. Analytical figures given show relatively high percentages to be present in the hair and placenta, the former pointing to the channel of elimination, the latter suggesting the reason of the frequent abortion and stillbirth and the occurrence of mentally defective children in those that survive. Emphasis is laid on damage to the liver and its functions as an integral part of the syndrome of lead colic. An account of the pathology of the degeneration and regeneration of the peripheral nerves, derived chiefly from the study of these changes in guinea-pigs, is fully described. Cocaine is discussed by E. Dupré and J. B. Logre under two headings—acute poisoning and cocainism. This type of drug-taking, far commoner among women of the prostitute class, has been seriously on the increase for some years and, in spite of special legislation, is still on the increase. In the diagnosis of cocainism stress is laid on the frequent presence of a perforation of the nasal septum when the drug is taken by insufflation. M. Langeron in writing on fungi quotes from a number of epidemics of this type of poisoning. No doubt the French nation eat more varieties of the "champignon" than are favoured in England, and thus mistakes are more commonly made. A good botanical description of the various types of fungi is given, and a classification based on their symptomatology will be found useful.

We can heartily recommend this volume to medical men. The title may attract principally the toxicologist, but the rendering of the word "intoxication" in its broadest sense will more accurately display the contents of the book, and the general physician will find much help in its pages.

THE PLACE OF VERSION IN OBSTETRICS.

By IRVING W. POTTER, M.D., F.A.C.S., Obstetrician in Chief, Deaconess Hospital and St. Mary's Maternity Hospital, Buffalo. London: Henry Kimpton. 1922. With 42 illustrations. Pp. 138. 25*s*.

THE author's purpose in writing this book has been to bespeak a wider employment of the operation of internal podalic version. He has come to believe that it is justifiable to perform a version for the purpose of eliminating the second stage of labour and relieving the woman of the pain and distress of childbirth, since such a procedure in his hands has been attended by no increase of fœtal mortality and has had a lessened maternal mortality and future morbidity. In this country, at any rate, where the operation of version has largely been abandoned except in the treatment of complicated cases of labour, such a claim would require to be substantiated by strong proofs before it would stand much chance of being accepted. The author's technique consists in ironing out with the fingers the vagina and cervix, which must always be soft and dilatable before the version is attempted. The membranes are then, if necessary, ruptured high up and the child's two feet seized and brought down, the body being then gently delivered by traction; the anterior shoulder is first delivered, the posterior one being then rotated forwards and delivered. The fingers of the left hand are now introduced into the baby's mouth and with the right hand gentle pressure is made upon the occiput over the pubes to aid in the flexion of the baby's head and to direct its passage through the pelvic canal. When the mouth is exposed mucus is milked out of the throat by gently stroking the front of the neck with the fingers. The head can be left at the vulva as long as need be to dilate the perineum and vaginal structures and finally it is delivered well flexed. The placenta is manually extracted or pituitrin is given to hasten its expulsion.

During the year ending August 31st, 1920, Dr. Potter delivered 1113 women, 920 of them by version and 80 by Cæsarean section. It may be noted in this connexion that the Chicago Lying-in Hospital, receiving picked cases from a population of some

3,000,000, among 3500 deliveries does not average 60 Cæsarean sections in the year. The fœtal mortality in this hospital under conservative treatment is less than 4 per cent., a figure which includes all premature and macerated fœtuses and monstrosities, while, so far as we can gather from Dr. Potter's figures given, his average fœtal mortality is about 6·7 per cent. It must be borne in mind that this high fœtal mortality is obtained not in cases where interference is urgent but in cases the great majority of which if left alone would deliver themselves spontaneously. Indeed, from a perusal of the book it would seem that for Dr. Potter there are only two methods for delivery: Cæsarean section or version under full anæsthesia.

It is not surprising that these methods do not appear to be received very favourably by most obstetric teachers in the States. We do not believe that anyone in this country will adopt them. We are told that the morbidity of childbirth is decreased, but no proof is forthcoming of this statement, and the results given are furnished in so sketchy and confused a manner as largely to destroy their value.

TRIAL OF GEORGE JOSEPH SMITH.

Edited by ERIC K. WATSON, LL.B., Author of "Eugene Aram: His Life and Trial," Editor of the "Trial of Thurtell," &c.; Member of the Medico-Legal Society. London and Edinburgh: William Hodge & Co., Ltd. 1922. Pp. 339. 10*s.* 6*d.*

EVEN amid the horrors and anxieties of the first year of the late war the "Brides in a Bath" case attracted attention to the outstanding criminality of George Joseph Smith. Now, seven years after his execution, in the latest volume of the admirable "Notable British Trials" series, and with the aid of Mr. Eric Watson's excellent and exhaustive introduction to the evidence, we are enabled fully to appreciate his cruelty, his ingenuity, and the fact that twice at least inquests were held and his victims buried without any suspicions that mattered to him being aroused. Whatever relatives might have thought they were given no opportunity to be present at inquest or funeral.

Smith was a thief and a deceiver of women all his life. He married Beatrice Thornhill in 1898, trained her to steal, and went to prison for receiving goods stolen by her. He had gone through the form of marriage with Edith Pegler with whom he lived in the intervals between "marrying," robbing, and deserting other women. These, however, were minor incidents in his career. In August, 1910, he married Bessie Mundy, robbed her, absconded from her, accidentally met her two years later, and was forgiven. On July 8th, 1912, she made a will securing to Smith money held for her in settlement; on the 9th he bought a cheap bath for her use and on the 12th she was found in it dead. It was for this murder that he was tried and hanged in 1915, but evidence as to two other similar deaths was admitted at his trial to show a "system" and to disprove any defence of an "accident." The testimony so given proved that in the case of Alice Burnham and in that of Margaret Lofty rooms had been taken with particular inquiry after baths, arrangements made to secure possession of any property to be gained by their deaths, and drowning in their baths had put a speedy end to their brief lives as "brides." Further, Smith had paved the way to safety by taking each woman just before her death to a doctor near at hand, and detailing to him before an acquiescent patient a tale of illness (it was supposed epilepsy in the case of Mundy) which served to account for the form of death in the mind of a medical man unprepared to suspect murder, and ignorant of all the circumstances of the deceased. The admission of the evidence of Smith's "system" formed a question of interest to lawyers. The facts proved after its admission are a lesson to coroners and to medical practitioners. Neither doctors nor coroners, especially the former, should, however, be sweepingly condemned for failing to detect murder where apparently "death by misadventure" had been accounted for. Probably the medical men did not realise until their evidence had been sifted at the trial of Smith, how little in fact they knew from their observation and from the mouths of their patients as to the illnesses to which they attributed such tragic results. They were not detectives and they were given little opportunity to form suspicions and to confirm or reject them.

Consequently medical men will find much that will repay close perusal in the questions of medical jurisprudence raised by the evidence against Smith. It is upon coroners, however, primarily that the duty of thoroughly investigating cases of "sudden death of which the cause is unknown," as well as of "violent" or "unnatural" death is imposed by statute. In the case of Mundy and in that of Burnham verdicts were returned of "Death by misadventure" on the day of the opening of the inquests with no relatives present, and with no proof that the circumstances, such as the size and shape of the bath and the position and condition of the body, bore out the story of the husband and the evidence of the medical man's opinion. Mundy's body had actually been left by the murderer with the feet resting at the end of the bath, partly above the surface of the water and with the legs stretched out, the adopted theory of the prosecution being that, having entered the room, the door of which in each case was left unbolted, and having the confidence of his victim he had seized her feet, raised them suddenly, and so brought her head under water before she could resist. Murder might well have been suspected in Mundy's case, but it must be remembered that if that death had stood alone a verdict of "Guilty" would have been difficult to obtain. In any case it may safely be said that Smith's crimes will not be repeated by others without arousing suspicion in the minds of anyone who has read the story built up with such skill and patience by the police when once they were set upon his track.

An account of how the suspicions of the police were eventually roused will be found in Mr. Watson's narrative, and is a lesson for those persons who censure newspapers without reflection for publishing detailed stories of murders and other serious crimes. Judges, it will be remembered, have often condemned the publication of portraits of accused persons. Such publication has advantages as well as disadvantages. A relative of Alice Burnham, and the occupier of the house where she was killed, read in newspapers the story of the inquest on Margaret Lofty at Highgate—the only inquiry which the coroner adjourned. They communicated from two different quarters with the police, and the ball was set rolling by investigation of the similarities between these two deaths. A little later the precisely similar death of Bessie Mundy at Herne Bay was discovered and compared. So came the end of Smith. Mr. Watson makes observations which will be found interesting on the psychology of the criminal himself and of the women attracted by him. Sir E. Marshall Hall, who defended him, seems to have thought that he hypnotised his victims. However this may be, Mr. Watson designates him as the most atrocious English criminal since Palmer. With this verdict we are not inclined to disagree—we even doubt the pre-eminence of the Rugeley murderer.

OPHTHALMIC SURGERY.

By Major V. NESFIELD, late I.M.S., F.R.C.S. Eng., Ophthalmic Surgeon, Queen's Hospital for Children, Bethnal Green. London: H. K. Lewis and Co., Ltd. 1922. Pp. 172. 9*s.*

As the author says in his preface, this book is the outcome of his own personal experience, and hence will be found to be somewhat unorthodox. It is not intended as a text-book for students, many parts of the subject, including all ophthalmoscopic diagnosis and the whole of refraction, being altogether omitted. The parts of ophthalmic surgery with which it deals, however, are treated with a freshness and originality which is bound to engage the interest of everyone who has had actual experience in the surgical treatment of ophthalmic cases. This applies more especially to the chapters on operations for cataract, concerning which the author's Indian experience entitles him to

speak with some authority. He greatly prefers the intra-capsular to the extra-capsular method of operating, but has rejected Colonel H. Smith's operation on account of the frequency with which vitreous is lost. His own operation consists in rupturing the suspensory ligament, not during the actual extraction, as in Smith's operation, but prior to it. This he does by means of a blunt hook specially devised by himself. This method of employing it, and the reasons by which he justifies his own operation as against the ordinary extra-capsular one on the one hand and Smith's intra-capsular one on the other, are fully set out, and will be of interest to ophthalmic surgeons. This method was first published in the *Indian Medical Gazette* in 1909, but we do not know that it has been adopted in this country to any extent. Now that its author has returned from the East, it seems likely that more will be heard of it.

The chapters on cataract are the most important part of the book, but the rest of it is by no means devoid of original suggestions, as in the author's methods of treatment for trachoma, his suggestion to trephine for progressive myopia, and his employment of subconjunctival injections of phenolaine for corneal opacities. His methods of dealing with such ordinary diseases as corneal ulceration, and the various forms of conjunctivitis well repay perusal. Perhaps the least satisfactory part of the book is that dealing with glaucoma. Here, too, there is evidence of original thought, but the whole subject of the chronic form of the disease, as we know it in this country, is ignored. In the description of the operation for trephining, Major Nesfield's advice to drop in eserin immediately after the operation needs justification, as it is contrary to that of Colonel R. H. Elliot and most authorities. Among minor blemishes in the book, it might be mentioned that in the treatment of lacrymal obstruction no mention of syringing is found; and spelling of the word "pterygium" is too phonetic.

We recommend the book as the outcome of an obviously original mind presenting knowledge and ideas in a pleasing form.

MATERIA MEDICA FOR DENTISTS.

Fifth edition. By FRANK COLEMAN, *M.C.*, L.R.C.P., M.R.C.S., L.D.S., Assistant Dental Surgeon, St. Bartholomew's Hospital; Dental Surgeon and Lecturer in Materia Medica, Royal Dental Hospital. Oxford Medical Publications. London: Henry Frowde and Hodder and Stoughton. 1922. Pp. 308. 10*s.* 6*d.*

PRACTICALLY a fresh book has emerged in this edition, based on a well-known volume, for which Messrs. D. P. Gabell and H. Austen were responsible. It is in every respect an admirable production and should prove of value to practitioner and student. The drugs are classified according to their pharmacological action, and though this inevitably leads to a certain amount of repetition, the advantage to the student is undoubted. Some might cavil at the liberal way in which Mr. Coleman interprets his subject, for he describes a large number of drugs which have no place in dentistry. We think he is justified in so doing, for the student who acquires a good idea of general pharmacology will be more fitted to use intelligently those drugs which are commonly used by dentists. On the dental side the book is remarkably complete. A few minor errors have crept in. On p. 34 a prescription for ulcerative stomatitis is given as follows:—

Vini ipecac.	..	..	℥1
Glycerin.	..	..	ʒ1
Liq. arsen.	..	..	ad ℥1

This would baffle any chemist and should, doubtless, read vini ipecac. ℥ss. The statement is made that solutions of cocaine can be boiled with impunity without decomposition. Under certain conditions this is true, but not to state these conditions is to make the information dangerously misleading. In receptacles of absolute neutrality, such as cast silica, cocaine solutions are not affected by a temperature of 120° C. But in ordinary glass vessels, which are alkaline, decomposition on boiling readily occurs. A useful feature of the book is the large number of prescriptions which are given. The addition of a few blank pages at the end for additional prescriptions and formulæ might prove useful in future issues.

The book is well produced and is a valuable addition to dental literature.

DISEASES OF THE STOMACH AND UPPER ALIMENTARY TRACT.

Fifth edition. By ANTHONY BASSLER, M.D., F.A.C.P., Professor of Gastro-Enterology, New York Polyclinic Medical School and Hospital and the late Fordham University Medical College; Visiting Physician, New York Polyclinic Hospital. Philadelphia: F. A. Davis Company. 1922. Pp. 975. 88.

THE new edition of Prof. Bassler's well-known book will attract many readers. Recent advances such as fractional gastric analysis and duodenal tubage are fully described, and the technique of such procedures as gastroscopy is dealt with. The reader might appreciate fuller reference to the comparative appearances of, and findings from, the normal, but doubtless the author has been restrained by limits of space. It contains more than 250 illustrations, many of which are admirable. Thus, following p. 134 will be found 35 full-page reproductions of radiograms illustrating all the common appearances of the normal and pathological stomach.

It is unfortunate that the reader's pleasure is diminished by the clumsy and sometimes ungrammatical language employed; such phrases as that on p. 85, in which the writer states that "It is surprising how little more time it takes to make records of cases when one habituates himself to it in steady practice," mar what is in many respects a remarkable volume.

JOURNALS.

QUARTERLY JOURNAL OF MEDICINE.—The October number contains articles by the following authors: S. C. Dyke: A Preliminary Report on some Cases of Contracted Kidney. An account is given of the renal function, as judged by the blood and urine urea content, and the urea-concentration test in nine cases of nephritis, in eight of which a contracted kidney was found post-mortem. The macroscopic and microscopic appearances of the organs are also recorded. In seven of the cases the arterioles of the kidney showed inflammatory changes together with "diffuse hyperplastic sclerosis," and before death renal inefficiency was observed. The author suggests that these changes are the result of one toxic agent and that a true cardio-vascularly contracted kidney belongs to the senile arterio-sclerotic type.—G. B. Fleming: The Respiratory Exchange in Cretinism and Mongolian Idiocy. Basal metabolic observations on children are liable to greater errors than in the case of adults, owing to the difficulty of ensuring complete muscular repose during the tests. The author graphically recorded the movements of the child in these experiments and applied a corresponding correction to the results obtained. In two cases of cretinism it was found that the metabolic rate was low before thyroid administration, but after treatment it rose to the normal value or became slightly in excess. In six mongols the metabolic rate as compared with that of a child of the same weight was normal, although somewhat lower than that of a healthy child of the same age. Thyroid treatment, however, did not influence their metabolism. These appear to be the first observations on the basal metabolic rate in mongols.—Arthur J. Hall and J. S. C. Douglas: On Relapsing Pyrexia in Lymphadenoma, with an Account of a Case. A description is given of a case of the "cryptic" type of lymphadenoma with relapsing pyrexia. Very slight changes were found post-mortem in the lymphatic glands, but the liver contained lymphadenomatous deposits and was considerably enlarged, and there was also some swelling

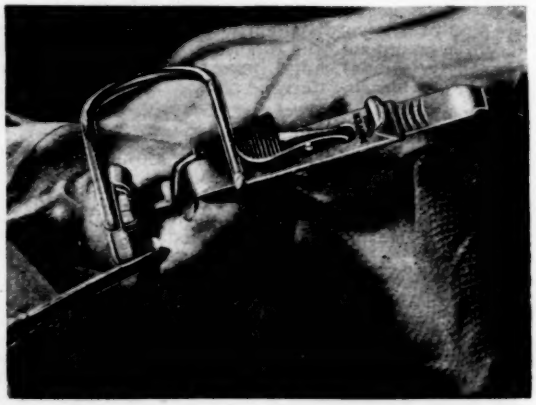
of the spleen. The diagnosis remained in doubt up to the time of the microscopical examination of the organs. Records of cases of this type probably number less than 50, but the authors, by a study of the temperature charts of some of these, point out that the "span" of pyrexia is usually from 15 to 25 days, and is fairly constant in each case. The pyrexia suggests that the disease may be due to a protozoal infection.—Geoffrey Evans: Arterio-sclerosis in Children. Four cases of chronic nephritis in children which terminated fatally were observed together with the pathological findings. From the histological study of the affected organs it is concluded that diffuse hyperplastic sclerosis is a similar condition both in children and in adults. The actual cause of the vascular changes still remains undetermined.—S. V. Telfer: Studies on Calcium and Phosphorus Metabolism. Part I.: The Excretion of Calcium and Phosphorus. Observations were carried out upon infants placed in a "metabolism" bed, and fed with cow's milk. It was shown that the amount of calcium and phosphorus excreted varies with the quantity ingested, and no evidence was obtained in favour of these elements having to any appreciable degree an endogenous source. Only a small amount of the calcium excretion occurs by the kidneys, whereas 40 per cent. of the phosphorus elimination takes place by this route. Calcium soaps play a part in determining the bulk of the fæces. When fatty derivatives are in excess in the stools phosphates are deviated from the intestines to the urine for excretion. Part II.: The Metabolism of Calcium and Phosphorus in Rickets. The mineral matter in the dried limb bones of rachitic pups may be as low as 17·7 per cent., the normal average being 44·9 per cent., but the relative amount of calcium and phosphorus is not altered. The softening of rachitic bone must, therefore, imply an alteration in phosphorus metabolism of no less importance than that of calcium. Findlay, Noel Paton, and Sharpe, in a previous contribution to this Journal (1921, xiv., 353), brought forward evidence to show that the bony softening was not due to decalcification, but they could not determine definitely whether or not there was a deficient supply of calcium to the bone. Only cases of active rickets were studied in the present investigation, and each experiment was continued for at least five days. In these cases of rickets a diminished retention of CaO and P_2O_5 was observed, but in no instance was there a negative retention of these substances. The conclusion arrived at is that no support was obtained for the theory that excessive decalcification is the cause of bony softening, and that defective absorption of calcium from the intestines cannot be excluded as a factor in the bony changes in rickets.

BRAIN. Vol. XLV., Part 1.—Joshua Rosett, M.D.: A Study of Thomsen's Disease, based on Eight Cases in a Family Exhibiting Remarkable Inheritance Features in Three Generations. In some members of the three generations of a family described myotonia was found, always associated with a large musculature, while in the other members psychoses of various kinds were present. The condition of myotonia was inherited as an independent factor from the first female; it became dominant, that is to say, became manifest as a muscle abnormality, in those cases where the offspring inherited a large musculature. After full consideration of the facts, however, the author comes to the provisional conclusion that myotonia congenita is caused primarily not by an inherited abnormality of muscular structure or function, but by an inherited sublethal factor which exerts an injurious action upon the neuro-muscular system.—Violet H. Keiller: A Contribution to the Anatomy of Spina Bifida. A very careful examination of seven cases of different types of spina bifida undertaken in order to emphasise certain features in the minute structure of these cases which have a direct bearing on details of operative procedure and on prognosis. The conclusion is that except in cases of spina bifida occulta with pressure symptoms, and in a small number of meningoceles in which there is adherence or traction of the nerve roots but no lesion of the cord, no improvement in function is to be expected as the result of operation. What may be hoped for is that the function of segments above the lesion will not be subjected to further impairment.—F. R. Miller and F. G. Banting: Observations on Cerebellar Stimulations. The authors consider that the cerebellar cortex is excitable. The reaction chosen as a test was the inhibition of decerebrate rigidity evocable by stimulation of the surface of the cerebellum. Excitation of the anterior surface of the vermis occasionally elicits walking movements of the fore legs and walking or running movements of the hind legs.—Charles N. Armstrong: Three Cases of Supra-Pituitary Tumour Presenting Fröhlich's Syndrome. None of these tumours started in or infiltrated the pituitary body.—J. F. Barrington: The Nervous Control of the Urinary Bladder in Amphibians. Paralysis of the bladder did not occur as a result of the destruction of any part of the brain in front of the posterior half of the mid-brain. By experiments in section of the nerve roots the author concludes that the impulses from the posterior part of the mid-brain which normally prevent over-distension of the bladder must pass out through both anterior and posterior spinal roots.

New Inventions.

A COMBINED GAG AND TONGUE RETRACTOR.

THE gag shown by the accompanying illustration is a copy of one designed by Dr. Davis and was brought back by me from America. It combines gag



and tongue retractor. The gag is constructed on the principle of the hanging laryngoscopy apparatus and has five spatulæ of different sizes, so that it can be used for adults and children. It gives a more perfect view of the tonsils than can be obtained with many other gags, and further, by gently raising the lever the air way is kept perfectly clear. On the right of the patient's mouth there is a tube for sucking out the blood, and on the left of the spatula, as will be seen from the illustration, is the anæsthetic tube. By using this gag in conjunction with a suction apparatus and ether blower, I can get better results than with any other gag that I have hitherto used. The suction apparatus prevents blood from entering the larynx and œsophagus and minimises the amount of sponging, so that there is less after-sickness and sore throat than when the older methods are used. A little care must be exercised when inserting the gag lest the posterior wall of the pharynx be bruised.

The apparatus has been made for me by Messrs. Mayer and Phelps, Chiron House, New Cavendish-street, London, W. 1.

H. EDMUND G. BOYLE, O.B.E., M.R.C.S., L.R.C.P.
Upper Wimpole-street, W.

THE LANCET.

LONDON: SATURDAY, NOVEMBER 25, 1922.

The Position of Radiology.

THE joint meeting of the Rontgen Society and the Section of Electro-Therapeutics of the Royal Society of Medicine, held last week end in Manchester and briefly reported on p. 1140, gives rise to two main lines of thought. The first of these is the rapid development and importance of radiology and radiotherapy as a branch of medicine as a whole, and the second is the tendency for this subject to develop along novel lines. During the last 20 years the amount of work which has been done in radiological departments of hospitals has increased at the very least tenfold, and from the diagnostic point of view alone X ray examination has become an essential part of every branch of medicine, so that radiodiagnosis and physiotherapy form a specialty of supreme importance. A sound knowledge of medicine and pathology, in their recent developments, and full experience of apparatus, are necessary for the making of a good radiologist, and it is quite obvious, on examining more closely the various branches of medicine, how radiology has revolutionised a number of earlier conceptions in medical science. Take, for instance, Colles's fracture. The X ray examination of this condition was largely the forerunner of the present idea that the functional result contained in the treatment of a fracture was of more importance than the attempt to obtain exact union of bones by long-continued fixation. Similarly, it was discovered that massage and electricity greatly helped the process of recovery. Again, fluoroscopic and X ray photographic examinations have produced great advances in our knowledge of the normal and pathological anatomy of the stomach. Diagnosis of diseases of the kidney and of the pituitary gland may also be given as instances of cases in which, to say the least, medical diagnoses have been vastly improved. In the realm of treatment X rays, radium, electrolysis, high frequency, diathermy, and other physical agents are sometimes the ideal form of treatment in many and various conditions, and as time goes on more and more diseases will become amenable to treatment by the new and improved methods of the physiotherapist. The lecture given by Prof. JACOBAEUS, of Stockholm, on the division of pleural adhesions by galvano-cautery quoted a good example of the value of X rays, inasmuch as the observation of the patient by X ray examination is an essential part of the technique. Putting on one side the treatment of early cancer by surgery, which, it must be remembered, is the earliest and most primitive form of physical treatment, X rays, radium, and diathermy are the most promising means at our disposal for combating this disease, and, many as the failures are in the treatment of that difficult condition, it is now well established that it is possible to kill by radiation most cancer cells more easily than those of the average normal tissue.

Turning to the twin subjects of radiology and physiotherapy from the internal aspect, it has been stated already that they show certain novelties in development. Practically until the twentieth century medical treatment was chemical, manipulative, and partly surgical, but the rise of physical science has set the minds of medical men in new lines of thought. It must, therefore, be realised that this branch of medicine owes its existence to the work and discoveries of the great names in physics with which we are all familiar, and it was largely the discovery of radium which rendered it obviously a necessity for the physicist to be associated with the medical radiologist in the production of the proper methods of dealing with patients. The making of radium plates and emanation tubes, the measurements of radium, and all the various mathematical calculations associated with these processes, left no choice in the matter, and the physicist has become definitely a partner with the physician. The recent meeting in Manchester brought out this point very clearly, and no doubt the Rontgen Society should receive much credit for being a pioneer in recognising and rendering still closer this association. It must not be forgotten that the efficient development of radiology depends in no small degree upon the work of the manufacturer, and for the proper progress of the application of physics to medicine it is necessary that the physicist, medical radiologist, and manufacturer should be fully conversant with the difficulties and problems which face one and the others. Thus, for example, in the latest type of X ray treatment the medical practitioner in effect says that he wishes to get a certain dose of X rays to a definite position in the body without severely injuring the skin. The physicist then tells him what proportion of his superficial dose is obtained at that depth and position, supplying the data as to the hardness of the rays which can be used in the case. The two then turn to the manufacturer, telling him what they desire for routine treatment; it is his opportunity, when he has the facts placed fully before him, to produce apparatus suitable for the purpose. Upon the manufacturer must depend in a large degree the proper progress of the physical side of medical treatment.

To the radiologist for a long time the fight for recognition has been somewhat of an uphill one. The presence of a number of physicians and surgeons at Manchester at a meeting presided over by Sir HUMPHRY ROLLESTON, as President both of the Royal College of Physicians and of the Rontgen Society, shows that general medicine and surgery are arriving at a thoroughly sympathetic attitude towards radiology. Similarly the well-equipped demonstration room which is now provided on the initiative of Dr. A. E. BARCLAY at the Manchester Royal Infirmary, in which all clinical cases can be seen and demonstrated by the staff, should be a big step towards bringing about the needful coöperation. The pure pathologist, too, is turning with interest to the investigation of the changes which are produced in tissues by physical treatment, and work in the general investigation of cancer and other diseases continually suggests further points of view from which the radiologist can deal with disease. With this process of joining together there is also the opposite tendency of still further specialisation in radiology. We are all familiar with the fact that for a long time many electrotherapists have been giving themselves up almost purely to that subject to the exclusion of radiology. At the same time, radiodiagnosis has now become so big a subject that there are signs that the radiologist may devote himself in the future particularly to radiodiagnosis or radiotherapy as the case may be. The disintegrating process is being countered upon the right lines by the foundation of a diploma in radiology and electrotherapy at Cambridge and Liverpool, while the scheme adumbrated for the formation of an Institute of Radiology by

Sir ARCHIBALD REID at the dinner of the joint meeting in Manchester would allow all the branches of the professions and industries interested in radiology to meet together on a common basis. At the same time by means of a journal and a library they would be provided with information of what is going on in other branches of their specialty both at home and abroad.

The Approach to the Abdominal Viscera.

THAT great satisfaction may be derived from the practice of a handicraft is a commonplace. The phenomenon is no doubt due to the fact that motor reflexes once established are seldom forgotten as are mental impressions and experiences, so that a manual occupation can be followed at little intellectual expense. Certain it is that the mental effort expended in the performance of an exploratory laparotomy is often far less than that needed to arrive at a correct pre-operative diagnosis. The ease and immediate safety with which the abdominal viscera can be exposed to view has been held to be a direct inducement to the surgeon to relax his endeavour to arrive at precision in diagnosis before operation; a temptation to concentrate unduly upon the mechanical side of his profession, to become a mere dexterous journeyman, may obscure the main principles in a maze of technical details. But no really experienced surgeon is likely to suffer much from this tendency. The occasional dilemma of an incision in the wrong place is a sufficient incentive to him to visualise correctly, if possible, the intra-abdominal lesion before he embarks upon his operation. It would be nothing less than deplorable if he ceased to consider and reconsider the smaller details of his procedures, for every step he takes in performing an operation is irrevocable. No severed tissue can ever return absolutely to normal, a zone of fibrosis must always remain in place of a more highly differentiated structure. It is therefore well that from time to time attention should be directed to secondary considerations, and amongst these is the manner in which access to the abdominal viscera may be gained.

The paper by Mr. R. COYTE in THE LANCET last week does this, and attempts on the basis of anatomical observations to lay down rules for the selection of the incision. Let it be accepted that the division of the abdominal wall must always take second place to the proposed intra-peritoneal procedure, and we shall choose wisely if we are guided by the principle that the least functional loss should ensue from this division. Mr. COYTE'S incisions are planned so as to avoid section of motor nerves, an injury liable in some cases to be followed by permanent paralysis, with the reaction of degeneration in a segment of the abdominal parietes.[1] All will not agree with him in his description of the paths pursued by the motor nerves. The seventh, eighth, and ninth intercostal nerves certainly form the loops he describes, the tenth nerve runs almost transversely, whilst the nerves in the abdominal wall below this usually travel obliquely downwards to their destinations. As they do this they frequently form communications with one another, so that it is literally impossible to make an incision of any length in the lateral part of the lower abdominal wall without severing some nerve fibres. The most harmful of all incisions from this point of view is the oblique one, parallel with the costal margin, so often employed for the removal of the spleen, for, as Mr. COYTE points out, it cuts the seventh to the tenth intercostal nerves. Whilst serious weakness often follows this method of exposure, it is true that sometimes it seems to leave no obvious disability of the muscles, "a fact," he adds, "which is very difficult to explain." Most experienced surgeons will admit the occurrence of this unexpected result *if the patients be examined some considerable time after the operation*. The explanation appears to have been given by the work primarily of HEINEKE on the neurotisation of paralysed muscles.[2] This investigator removed, in rabbits, a large segment of the posterior tibial nerve and then grafted the peroneal nerve into the gastrocnemius. Signs of recovery of function began to appear within 14 days and the whole muscle responded to faradism with strong contractions in four weeks. He also showed that if the sheaths were removed from a paralysed and from a contiguous healthy muscle, so that an intimate approximation by sutures could be affected, nerve fibres grow out from the functioning into the paralysed muscle and actually form new motor end-plates. The work has been corroborated. When nerves are divided in a laparotomy the conditions are often ideal for such regeneration to take place. Nevertheless, too much reliance should not be placed upon this phenomenon, as recovery of function sometimes fails to appear. A close examination of such cases shows that they all possess one common factor. There is a barrier of fibrous tissue through which the regenerating nerves cannot penetrate. This may result from sepsis, from inefficient suture of the muscle layers, so that the cut edges separate a little from one another, or from the formation of an intramural hæmatoma; again, the incision may have been planned badly from the first, by which the nerves are divided where they pass through an aponeurosis. Such an incision is one along the linea semilunaris, which seems to be followed very commonly by a paralysis of a portion of the rectus. Similarly it is inadvisable to prolong a BATTLE incision beyond certain limits, as here also the divided nerve ends are not very favourably placed for growing into the rectus again. For the incision in the linea semilunaris can usually be substituted with advantage, even from the point of view of efficient access, the oblique incisions through the muscular part of the lateral abdominal wall recommended by RUTHERFORD MORISON. If nerves should be cut in doing this, provided the suturing is done carefully, the conditions are very favourable for regeneration. The avoidance of nerves, apart from free access, is not the only consideration in planning the incision. The likelihood or not that sepsis will be met with inside the abdomen, the direction of the strain to which the scar will be subjected, and the degree of vascularity must all be taken into account.

Progress in surgery, as in any other science, depends upon the birth of new concepts, the truth of which can often be established or disproved only by the perfection of a new technique. A great surgeon has recently said that a man can be a tolerable surgeon with a shaky hand, but not with a shaky head. Yet he with the steady hand and steady head will be the greater. The discussion of the propriety of some of our accepted methods of surgery with a view to their improvement is always to be encouraged. It will be an evil day when amongst the attributes of a surgeon the possession of a dexterous hand ceases to be considered second only to a keen and swift mind.

[1] C. A. Pannett: Proc. Roy. Soc. Med., 1913, vii., 1.

[2] Zentrblt. f. Chir., 1914, ii., 465.

The Lessons of War Medicine.

SURPRISING as it may appear, it seems true that, in the late war, the study of the diseases incidental to war conditions has led to more real advance in knowledge than the study of wounds and war surgery in general. The first volume of the official history of the war,[1] devoted to the medical services, affords most interesting and instructive reading, and contains much information of importance for civil practitioners as well as for army medical officers. War surgery is in many respects a highly special subject and its lessons are only applicable to civilian surgery to a limited degree, although, as we pointed out in our review of the corresponding volume devoted to war surgery,[2] it has resulted in a notable advance in chest surgery; this is already producing good results in diseases of the lungs, pleuræ, and mediastinum in civilian practice. War medicine, on the other hand, deals with diseases which occur in civilian populations, but deals with them often in enormous numbers and under conditions favourable for concentrated and collective study. Fortunately, at any rate in the later stages of the war, excellent use was made of these opportunities by specialist physicians, bacteriologists, and sanitary officers, as the volume before us demonstrates.

We have referred already, in a preliminary editorial note,[3] to the introductory chapter dealing with the general aspects of disease during the war, contributed by Major-General Sir WILMOT HERRINGHAM. The enteric group of fevers is discussed by Major J. A. TORRENS, who gives a concise and authoritative account, the question of diagnosis being critically considered. It is interesting to note that Major TORRENS states that nothing has evolved to modify the old-established general treatment of these fevers. The use of vaccines in treatment has not so far produced any strikingly beneficial effect. The chapter on dysentery, by Brevet-Major P. H. MANSON-BAHR, gives a valuable summary of the advance in our knowledge of this group of diseases made during the war. He describes the following types: bacterial, protozoal, and verminous, the last-named being dealt with chiefly from its importance in differential diagnosis. The questions of prevention and treatment are discussed in clear and practical fashion. The chapter on cholera, by Colonel O. L. ROBINSON and Major J. T. MITCHELL, and that on typhus fever, by Colonel WILLIAM HUNTER, are short but extremely interesting, particularly in their description of the measures used to limit the spread of these diseases. A useful account of cerebro-spinal fever is given by Colonel MICHAEL G. FOSTER and Lieut.-Colonel MERVYN H. GORDON, its value being greatly increased by the coloured plates illustrating the forms of rash which occur in that disease. It comes as somewhat of a surprise to find how few of those who have recovered from this disease have made claims for disability in direct consequence of it, though, doubtless, some have made claims for deafness or loss of vision without reference to the primary disease. The account given of influenza by Major-General Sir WILMOT HERRINGHAM and Lieut.-Colonel HERBERT FRENCH is excellent and should be of great value for reference in the future. The rôle of Pfeiffer's bacillus, the post-mortem appearances, and the treatment are all critically discussed. The coloured plate illustrating the condition of "heliotrope cyanosis" is admirable. A short chapter by Major-General Sir JOHN ROSE BRADFORD and Colonel FRENCH on purulent bronchitis and broncho-pneumonia deserves careful study, more especially because of the discussion of the bacillus of influenza in relation to its causation. The need for further research into the ætiology of influenza and of purulent bronchitis is apparent. Malaria is dealt with in two long chapters by Colonel C. M. WENYON, Major MANSON-BAHR, and Captain J. WATERSTON. The statement that of all diseases responsible for casualties during the war, malaria probably holds first place is one that can hardly be doubted in view of the figures given. It is impossible to withhold a tribute of admiration for the efforts made to deal with a problem of the greatest difficulty, particularly in Macedonia. The subject of treatment of the malarial manifestations is dealt with in a critical fashion, and much valuable information as to the methods of quinine administration is given. Lieut.-Colonel H. B. NEWHAM contributes chapters on blackwater fever and trypanosomiasis, and Lieut.-Colonel ANDREW BALFOUR deals with relapsing fever and phlebotomus fever. A useful description of trench fever and of the relationship of lice and the Rickettsia bodies to its causation is contributed by Sir WILMOT HERRINGHAM and Lieut.-Colonel W. BYAM.

An interesting discussion of the various conditions causing jaundice is given in the chapter on this subject by Major-General Lord DAWSON OF PENN and Colonel W. HUNTER. The classification of the varieties of jaundice into jaundice due to excessive destruction of red blood corpuscles, obstructive jaundice, and jaundice with hepatitis seems a convenient one. A clear and useful account is given of spirochætal jaundice and of epidemic jaundice. This chapter is also illustrated by a good coloured plate and by some useful reproductions of microscopical specimens. Scurvy and beri-beri receive careful and detailed consideration in two chapters contributed by Colonel Sir WILLIAM WILLCOX. The account given of famine dropsy by Colonel J. A. NIXON is interesting and instructive, and includes a valuable discussion of its pathology. A useful and clear account of pellagra is given by Brevet-Colonel P. S LELEAN. After a critical discussion of the cases observed among the prisoners of war in Egypt, he supports the theory, propounded by Prof. W. H. WILSON, that pellagra is associated ætiologically with an actual or relative deficiency in the biological protein value of the diets, this being defined as the ratio which its power to maintain nitrogenous equilibrium bears to that of pure animal protein. The description given of war nephritis by Sir JOHN ROSE BRADFORD is noteworthy. He concludes that it is essentially similar to the form occurring in civilian patients, in spite of the minor differences in symptomatology, notably the frequency of dyspnœa as an early symptom and the transitory duration of serious anasarca in some cases. The concluding chapter is devoted to disorders of the cardio-vascular system and is contributed by Colonel W. E. HUME and Lieut.-Colonel JOHN HAY. It is well worth careful study, more particularly for the full and closely reasoned account given of the conditions variously labelled D.A.H., soldier's heart, or the effort syndrome.

The whole volume reflects great credit upon editors and contributors alike. It is not, as it might easily have been, a dry statistical summary, but a stimulating and readable record of great achievements, of which our profession may be justly proud.

[1] History of the Great War, Based on Official Documents. Medical Services. Diseases of the War. Vol. I. Edited by Major-General Sir W. G. Macpherson, K.C.M.G., C.B., Major-General Sir W. P. Herringham, K.C.M.G., C.B., Colonel T. R. Elliott, C.B.E., D.S.O., and Lieut.-Colonel A. Balfour, C.B., C.M.G. London: Printed and published by His Majesty's Stationery Office. Pp. 550. 21s.

[2] THE LANCET, Sept. 23rd, 1922, p. 674.

[3] THE LANCET, July 22nd, p. 190.

Ordeal by Gossip.

ON August 16th last, about 10 A.M., Dr. BERNARD HARTSHORNE, a retired medical practitioner, essayed to perform a small operation upon Mrs. JELFS, a widow lady of some means, with whom and with whose late husband he had been personally friendly for a number of years. The operation was to relieve a distressing affection of the genito-urinary tract, and after assuring himself under anæsthesia of the condition Dr. HARTSHORNE proposed to swab freely with iodine. Mrs. JELFS had expressed the wish that no one should be present in the room during the operation, a condition in which Dr. HARTSHORNE unwillingly concurred, although at his suggestion a friend of the patient came to stay in the house over the event. After a preparatory injection of morphine gr. ¼ Dr. HARTSHORNE proceeded lightly to anæsthetise Mrs. JELFS with a mixture of chloroform two parts and ether three parts. The patient took the anæsthetic well, but after a few minutes stopped breathing and became collapsed. Dr. HARTSHORNE thereupon summoned the friend, who was waiting in an adjacent room. He applied artificial respiration while she sent for a nurse and two other doctors, but in spite of their combined efforts the patient did not rally, death occurring at 8 P.M. Dr. HARTSHORNE had previously administered an anæsthetic to Mrs. JELFS on four occasions, and although he knew her to be suffering from mitral stenosis and reflux with some hypertrophy and dilatation, he did not think that there was anything in the condition of the heart to prevent her taking the anæsthetic well. He gave a death certificate recording the cardiac condition and stating the immediate cause of death as collapse nine hours after anæsthesia. This certificate was accepted without demur by the Registrar, who gave a burial order without communicating with the Coroner. It then came out that Dr. HARTSHORNE was one of Mrs. JELFS'S executors and a beneficiary to a considerable extent under his patient's will, made many years ago. Some conversation regarding the cause of death took place at the funeral, when Dr. HARTSHORNE'S co-executor overheard the suggestion that "the doctor had practically murdered the lady." Complaints which reached the West Middlesex Coroner led him to have the body exhumed on Oct. 17th, and at the adjourned inquest on Nov. 15th the jury came unanimously to the opinion that Mrs. JELFS met her death by heart failure following anæsthesia, as stated by Dr. HARTSHORNE, and that no blame whatever was attached to his conduct. Mr. REGINALD KEMP, the Coroner, in charging the jury, said there was no doubt that the doctor had acted foolishly and was "asking for trouble," knowing he was a beneficiary under the will, in not having insisted upon an inquest.

We have set out baldly the relevant facts of a painful case which has come very prominently before the notice of the public in the daily press. The exhumation and what the Coroner called "the disease of gossip" which preceded it led to mental distress of such a degree on Dr. HARTSHORNE'S part that he attempted to take his life, and this misguided action led to a widespread assumption that he had been guilty of something more than imprudence. There is nothing, however, in the facts as we have learned them inconsistent with the supposition that, as an old friend of 37 years' standing, Dr. HARTSHORNE was desirous of relieving his patient from a minor but distressful condition without interfering more than need be with a natural sensitiveness of disposition. That he was not wise in his own interest in administering an anæsthetic alone to a patient by whose death he was pecuniarily to benefit is more than obvious, but the daily life of a medical practitioner is bound up with the comfort and welfare of his patients largely to the exclusion of personal considerations, and as the Coroner rightly insisted upon educing, Dr. HARTSHORNE'S financial position was not such as to make such a legacy of vital importance to him. There is no need to emphasise the lesson, which is clear enough for any doctor who finds himself in a similar position, but the complete acquittal of Dr. HARTSHORNE by the Coroner's jury will administer a salutary lesson to those who allowed a trial by gossip to prejudge the crowner's quest. The Recorder, in inflicting a nominal penalty for attempted suicide, spoke in strong terms of the relentless tittle-tattle to which Dr. HARTSHORNE had been exposed. Read with full knowledge of the facts, the Hartshorne case should serve to emphasise the rightness of the confidence which the patient places in his or her family doctor. Following the habit of a lifetime, Dr. HARTSHORNE considered his patient's feelings and forgot to consider his own reputation.

Annotations.

"Ne quid nimis."

THE CONTROL OF BIOLOGICALS.

FOR good or for ill the use of pituitary extract in medicine, particularly in the department of obstetrics, has grown with such rapidity and to such dimensions that the supply of raw material is scarcely adequate to meet the demand. Rightly used, this extract is a weapon in the hands of the doctor by which he may avoid difficulties or save life. Wrongly or inaccurately used the dangers it brings to mother and child may be extreme. It is a remedy used chiefly in the haste of an emergency when the practitioner has no time to stop to read labels or to make calculations. The maintenance of uniformity among the infundibular extracts on the market is therefore a matter of urgency, for only when that is secured will it be possible to deal with the practical question of therapeutic dosage. Ever since the Medical Research Council was appointed it has been its consistent policy to promote researches to determine the quantitative and qualitative value of biological substances used in preventive and curative work. The first Report on Biological Standards[1] opportunely concerns the physiological standardisation of extracts of the posterior lobe of the pituitary body. The report is the outcome of long and patient work by Dr. J. H. Burn and Dr. H. H. Dale at the National Institute for Medical Research at Hampstead which is designed to fulfil, in the biological sphere of medicine, functions analogous to those of the National Physical Laboratory at Teddington. We understand that hard on this report is to follow a further report from the Committee appointed by the Obstetrical Section of the Royal Society of Medicine to coöperate with the Research Council in a thorough investigation into the question of appropriate dosage.

The need for control can hardly be clearer than in the case of infundibular extract. The British Pharmacopœia has not yet recognised the existence of this potent and common remedy. The theoretic strength officially laid down in the United States Pharmacopœia would, if applied, result in the production of an extract having only a tithe of the activity of the existing preparations. Commercial extracts examined by Dr. Burn and Dr. Dale vary in their physiological activity within the widest limits, and yet all were described as "physiologically standardised." Dr. Burn and Dr. Dale satisfied themselves that a conscientious attempt had actually been made by the manufacturers to control activity by a physiological test, but it requires all the mental equipment of trained physiologists and the physical equipment of a research institute to devise laboratory methods for determining the potency of organic extracts. In the case of the pituitary the choice lies between the effect on blood pressure and that on the uterus as a measure of therapeutic activity; but the pressor and oxytocic actions do not necessarily run parallel, and in any case objection to the blood-pressure test has been

[1] Medical Research Council. Special Report Series. No. 69. H.M. Stationery Office. 1s. 6d.

taken owing to its greatly reduced sensitiveness at a second injection, tolerance apparently being rapidly established for the action of the most potent pressor principle. In the hands of Dr. Burn and Dr. Dale the isolated uterus of the guinea-pig proved far more satisfactory as a test object, the manipulations being simple and the test available to be carried out in any laboratory possessing the necessary equipment and by any one endowed with the necessary patience. Judged by the ascertained values of these two factors, five commercial samples of pituitary extract could be placed in a series in which oxytocic activity was represented by the figures 80, 45, 25, 11, and 1, while pressor activity varied from 80 to nil. It should be added in passing that when the attention of the maker was called to the quality of the least potent preparation, samples received later were found to have improved enormously. From these figures it is evident that a doctor accustomed to one preparation, when forced in an emergency to use its apparent equivalent, may be in danger of giving fifty times or more the intended dose, with serious or even fatal result. At present he is not even sure of getting a constant effect with a single preparation.

Responsible manufacturers are, we believe, themselves in favour of the establishment of biological standards by the Medical Research Council. The Departmental Committee, which reported[1] in the spring of 1921, recommended that the application of those standards should normally be left to the individual manufacturers and that the minimum of inspection necessary to see that the standards are faithfully and properly applied should be carried out by the scientific workers who have the responsibility for their preparation and maintenance. The legal authority for scheduling the substances would be the Committee of the Privy Council to which the Medical Research Council is itself responsible. In regard to the new pancreatic extract, known as "insulin," the position has been complicated by the action of the University of Toronto in patenting the name and the process of preparation, and some frank criticism, as may be seen from our correspondence columns, has been directed against the Council for accepting as a gift from Toronto the patent rights in this country. The term "patent," as ordinarily understood, conveys the impression of restriction for private gain and is entirely foreign to our conception of scientific medicine, but anyone who reads with care the report of the Departmental Committee, and along with this the first report on standards issued by the Research Council, can hardly remain in doubt that the highest interests of medical practice are being safeguarded. If the acceptance of the patent rights does no more than put up a ring-fence against the exploitation of this field of medicine by unscrupulous vendors of proprietary extracts, leaving the Council free to supervise production on the broad and liberal lines seen in the report, no one will have any cause for anxiety. Last year it was evident that the Departmental Committee was presented with a problem which asked urgently for action, and the Research Council seems to have found a way of dealing with it efficiently, at little expense to the public and with the minimum of interruption to conscientious and efficient manufacture.

ANÆSTHESIA FOR CÆSAREAN SECTION.

AT the recent discussion before the Section of Anæsthetics of the Royal Society of Medicine Dr. Herbert Spencer expressed his preference for chloroform until the infant was delivered and ether during the remainder of the operation. Dr. Spencer laid stress on the technique which is followed, and the importance of this from the point of view of the anæsthetist is that it greatly reduces the period of inhalation. All preparations, arrangement of towels, sterilising of skin, and so on are completed before the inhalation is begun. The period during which chloroform is inhaled is therefore quite a short one, for Dr. Spencer was dealing solely with the classical Cæsarean operation. His opinion that if ether were solely relied on there was greater asphyxiation of the child was not upheld by other speakers. It was pointed out that if the curtailment of chloroform administration practised by Dr. Spencer was applied to ether his objection to the latter drug for the entire operation would be removed. There was a consensus of opinion that the infant born by means of Cæsarean section was more often in the asphyxial state than the child normally delivered. Dr. Spencer laid stress on the administration of the anæsthetic by "specially trained qualified medical practitioners" for all obstetric operations, although he believed in the safety and efficacy of small quantities of chloroform "à la reine" to mitigate the pains of normal labour. The opinion was expressed and generally accepted that chloroform was to be avoided in the presence of eclampsia. Several members spoke with enthusiasm of nitrous oxide and oxygen during Cæsarean section.

[1] THE LANCET, 1921, i., 497.

THE MICROSCOPIST AND HIS TOOLS.

THE medical microscopist owes a great deal to the enthusiastic amateurs of Victorian days whose hobby was the microscope. By their keenness and devotion to their favourite pursuit they not only added to our knowledge of practical optics but stimulated the instrument-makers to give of their best, for they were prepared to pay handsomely for their apparatus. Unfortunately, however, in this tradition of generous expenditure they have left behind them a legacy which bids fair to cancel the debt. The medical microscopist is interested more in medicine than in the microscope; indeed, it is not going too far to say that he would discard his microscope to-morrow if his purpose could be fulfilled more satisfactorily by some other instrument. To him the microscope is simply the means by which he earns his daily bread; he is usually a poor man and is prone to grudge the money spent on brasswork and polish. But the instrument-maker still appears to be obsessed by the Victorian tradition. He insists on gilding the lily and devoting his energies to the production of works of art which are obviously intended to rest on velvet beneath a bell-jar on a special table in the study. It is true that he recognises the existence of the poor student and for such a one cheaper instruments are provided, but too often the price demands a compromise between efficiency and polish—and polish wins. Nor are things otherwise in respect to accessories. For example, it seems beyond the power of man to produce for sale a really cheap and efficient microscope lamp, and the consequence is that laboratories throughout the country are carrying on with bulbs shaded by converted coffee-tins, or what not. Yet almost every representative of almost every firm has the same distressing tale to tell of the stagnation of trade. The medical microscopist, however, may take this comfort to himself—Nature's secrets are not to be bought in the shop by the man with the long purse. Schaudinn discovered the *Spirochæta pallida* without the help of modern illuminants and modern dark-ground condensers; it is the brain behind the instrument which really matters.

DEFECTIVE VISION AND MOTOR ACCIDENTS.

Dr. Waldo, the City of London coroner, at an inquest held recently on the driver of a motor vehicle who was blind in one eye, suggested that under present conditions anyone of the necessary age, even if blind, troubled with fits, or suffering from any physical defects, can obtain a licence to drive a motor vehicle by paying a fee of 5*s*. It is plain that the risk of this state of things will have to be considered when the law affecting motorists is revised. Meanwhile it is highly desirable that there should be a clear understanding on the part of the public, and especially of the medical profession, as to the kind of visual defects which constitute a danger. They are of two kinds—

defects of visual acuity and narrowing of the binocular field of vision, and we do not hesitate to say that from the point of view of the motorist the second is far more serious than the first. The capacity to discern the details of distant or near objects is, no doubt, useful, but it is not essential from the point of view of the prevention of accidents, so long as the objects themselves are seen. On the other hand, the capacity to receive visual impressions proceeding from a lateral direction is one of the essentials of safety in motor driving. Normally the visual field extends to 90° outwards from the direction of any object in which the eye is fixed. Inwards it only extends to about 55°. If, therefore, one eye is blind, say the right, the motorist approaching a cross-road, while seeing normally along the road on his left, will only be able to see for a short way along the road on his right. We suspect that this is a not very infrequent cause of accident, though there are no statistics to prove it. Defective visual acuity in one eye, if only moderate in amount, would not have this effect, but if extreme, as, for instance, in some cases of monocular myopia or of cataract, it would. A contracted visual field from disease, as in glaucoma or retinitis pigmentosa, may be compatible with good central acuity, and this, as liable to affect both eyes, would be peculiarly dangerous. An internal squint might exist with or without good visual acuity in each eye, but would necessarily entail restriction of the binocular field of vision. We suggest that in the interests both of motorists themselves and of the public, regulations should be enforced providing for (1) a minimum binocular visual acuity which need not be very high; (2) a minimum visual acuity in *each* eye which need not be so good as with both together, but should be sufficient to provide against accidents in case of the temporary disablement of one eye (from a fly in the eye for instance); and (3) a normal binocular field of vision extending on each side to 90° from the fixation-point. For this it would be quite sufficient to apply the hand-movement test. In addition, it would be theoretically desirable to exclude those with a deficient light sense which would make driving by night dangerous, but as this is a rare condition, apart from disease affecting the visual acuity or fields, we do not suggest that it should be made part of a routine examination.

A MEDICAL CONGRESS AT MELBOURNE.

AN Australasian Medical Congress will be held from Nov. 12th to 17th, 1923, in the buildings of the University of Melbourne. A preliminary statement, giving the names of patrons, president and vice-presidents, and secretaries of the whole congress and of the various special sections has been issued, and it is obvious that the meeting is being admirably organised. Mr. G. A. Syme will preside over the congress and the names of the presidents of the sections are as follows. Medicine: Dr. W. Marshall Macdonald. Surgery: Mr. R. G. Craig. Obstetrics and Gynæcology: Dr. J. A. Cameron. Pathology and Bacteriology: Prof. J. B. Cleland. Preventive Medicine and Tropical Hygiene: Dr. F. S. Hone. Ophthalmology: Dr. D. D. Paton. Otology, Rhinology and Laryngology: Mr. T. S. Kirkland. Neurology and Psychiatry: Dr. A. W. Campbell. Diseases of Children: Dr. R. B. Wade. Naval and Military Medicine and Surgery: Col. W. W. Giblin. Dermatology: Dr. R. E. Harrold. Radiology and Medical Electricity: Dr. V. McDowall. It has been resolved by the executive committee that in all the work of the congress particular attention shall be given to the preventive aspect, including medical research. Travelling facilities are being granted by the Railway Commissioners of the Commonwealth and of the Australian States, and it is not anticipated that there will be any difficulty in securing accommodation for visitors during congress week. Further information concerning the congress may be obtained on application to the honorary general secretary, Dr. A. L. Kenny, at Medical Society Hall, Brunswick-street South, East Melbourne, Victoria.

NUTRITION ON HIGH PROTEIN DIETARIES.

OPINIONS have been repeatedly expressed that a high protein dietary is deleterious to omnivora or herbivora. It is generally agreed that protein can serve as the sole source of energy for the animal, and that from it can be formed carbohydrate and fat in the organism. It seems reasonable to suppose that a diet consisting largely of protein, supplemented with inorganic salts and the necessary vitamins, would suffice for the nutrition of the normal organism during the whole cycle of its life. Such a diet is adequate for many of the carnivora. J. C. Drummond, G. P. Crowden, and E. L. G. Hill experimented[1] on young growing rats as omnivorous animals, and on kittens as carnivorous animals by feeding them on diets rich in proteins, but containing in addition adequate amounts of salts and of the known accessory food factors. In the case of rats the diets employed consisted of caseinogen, starch, yeast extract, lemon juice, butter, shark liver oil, salt mixture, and water ad lib. The high protein diet of the kittens consisted of raw *lean* beef 110–170 g., yeast extract 2–4 g., shark liver oil 4 c.cm., and salt mixture 2 g. It was found that growth, but at a sub-normal rate, was shown by the rats and kittens fed on these dietaries, which contained 80–90 per cent. of the dry weight in the form of protein (caseinogen), but apparently adequate as regards vitamins and salts. On changing to a normal diet the animals reach normal weight. The rats maintained excellent health throughout, but did not reproduce whilst on the special diet. The organs and tissues presented a normal appearance at the end of the experiment, and there is little doubt that the abnormal conditions found in similar experiments by other workers—e.g., Chalmers Watson's results—were due to causes other than the high protein intake—e.g., vitamin deficiency, &c. The excretion of very large amounts of nitrogenous waste products over considerable periods of time does not, in the author's opinion, appear to cause damage to the kidney in these species. The failure to grow normally and to reproduce seems due not to the high protein intake itself, but to lack of balance between this constituent and some other component or components of a normal diet. It is tentatively suggested that vitamin B, which is believed to be quantitatively concerned in the metabolism of carbohydrates, may likewise be concerned in the metabolism of those non-nitrogenous fragments of the amino-acids which follow a similar fate.

ACHOLURIC JAUNDICE.

A MOST striking feature of acholuric jaundice is the close resemblance of all the cases; no disease seems to be more true to type. This factor is well brought out in a recent publication[2] by E. Meulengracht, who has produced a very complete summary of our present knowledge of acholuric jaundice. Everyone interested in the subject should note the facts collected and the conclusions drawn. In addition to the well-known changes, Meulengracht draws special attention to the microcytosis and the relatively high colour-index. The latter change and many others are similar to, but less marked than, the changes which take place in Addison's anæmia; but apart from the noticeable changes in the fragility they are sharply distinguished by the larger size of the red cells in Addison's anæmia. Another curious fact is the wide range over which hæmolysis takes place, or in other words, the great variations among individual corpuscles. Meulengracht finds that in normals hæmolysis began at 0·48–0·44 per cent. NaCl, and became complete at 0·38–0·32 per cent., the average point for half hæmolysis being given as 0·40 per cent. NaCl. There is evidently some disagreement about the point at which hæmolysis is complete, because most workers have found it to be complete at higher percentages

[1] Journal of Physiology, 1922, lvi., 6.

[2] Der Chronische Hereditäre Hämolytische Icterus. By E. Meulengracht, Privatdozent, Kopenhagen. Leipzig: Dr. Werner Klinkhardt Verlag. 1922. Pp. 226. M.120.

than this. In 24 patients with acholuric jaundice, Meulengracht found that hæmolysis began at 0·76–0·60 per cent. (one case 0·88 and one case 0·56) and was complete at 0·44–0·32 per cent., the average point for half hæmolysis being 0·49 per cent. NaCl. In the examinations on five patients from whom the spleen had been removed from one week to eight months previously, hæmolysis began at 0·62–0·56 per cent., and was complete at 0·36–0·32 per cent., the average point for half hæmolysis being 0·49 per cent. NaCl. In acholuric jaundice there is a much wider range of variation and the greatest change is in the concentration of sodium chloride at which hæmolysis begins, and the least change in the concentration at which it is complete. The average mid-point is considerably raised. The third group of figures shows conclusively that although splenectomy produces brilliant clinical results, the fragility of the red cells does not return to normal. Indeed, there is little change in the mid-point and end-point, but the hæmolysis does not start at such abnormally high concentrations. We have found these same facts to be true in two cases seen recently more than a year after splenectomy. This throws considerable light on the ætiology. Operation results suggested that the spleen was the organ essentially at fault, but as the red cells do not become normal after splenectomy, it is more probable that the primary factor in the disease is an abnormality of the red cells.

The other point of great interest about the disease is its inheritance. From the families whose histories Meulengracht has collected, he concluded that the disease is transmitted from parent to child, as a dominant character in the Mendelian sense of the word. This means that a healthy parent cannot transmit the disease, and though this seems to be the general rule, exceptions have been noted in this country. Perhaps no family has yet been under observation for long enough to allow dogmatism about this point.

THE PATHOLOGY OF BLACKWATER FEVER.

IN a critical review[1] of Recent Work on the Pathology of Blackwater Fever, Prof. Warrington Yorke points out that communications dealing with blackwater fever can be grouped under four headings: 1. Papers of an essentially clinical nature written by those visiting the tropics for the first time, whose interest has been aroused by this impressive disease. Their observations and impressions simply repeat what has been abundantly emphasised during the past 20 years. 2. Papers, mainly concerned with the endemicity of the disease, attempting to show by statistics the relationship between malaria or various kinds of malaria infection, and quinine, or length of sojourn in the tropics. These statistics are usually deficient in one or more essentials. 3. Papers dealing mainly with the treatment of the disease. Yorke considers that in the main these are without any value, and the claims made quite unjustifiable. 4. Papers dealing with the pathology of the disease. One of the most important of these is by Plehn (1920), who argues that owing to repeated destruction of the parasites during the febrile attacks, the body becomes supersensitive to the malaria parasite protein, so that eventually the dissolution of quite a small number of these organisms may precipitate the crisis. In most cases the decisive cause of this destruction is quinine. Plehn obtained no evidence that hæmolysis takes place in the blood-stream, neither is hæmolysin found in the blood of blackwater fever patients. The evidence points to the kidneys as the seat of hæmolysis, but the origin of the cylindrical plugs in the renal tubules is not clear. The inability to excrete bilirubin is important, as in the most severe icterus this substance is present in the blood serum. With regard to the production of jaundice, the evidence is not clear; in the worst cases the blood destruction is so great as to result in death without the supervention of icterus. Authorities are divided as to whether a hæmoglobinæmia occurs in blackwater. Christophers and Bentley, Barratt and Yorke are of the opinion that it does occur, and L. S. Dudgeon (1920) remarks that the evidence of hæmoglobinæmia rapidly disappears from the blood and may be overlooked unless the examination is made at the correct moment. There appears to be no justification for the general statement that the specific gravity of the urine in blackwater fever is abnormally low. The bulk of pathological and experimental evidence is against Plehn's theory of a primary renal lesion with hæmoglobinuria as a secondary phenomenon. Nothing is known about the mechanism by which the hæmolysis in blackwater is produced; in the case of paroxysmal hæmoglobinuria hæmolysis takes place in the peripheral blood and cold is the exciting cause; no autolysin has been found in the blood of blackwater fever.

[1] Tropical Diseases Bulletin, vol. xix., No. 8, October, 1922

COMPULSORY MATRIMONY IN TURKEY.

THE *Journal des Débats*, one of the most highly esteemed daily papers of France, is our authority for stating that the Turkish National Assembly is so anxious in regard to the population of the New Turkey, now in course of formation, that it is preparing a law to render matrimony a duty which, like a compulsory military service, must be enforced on all. No conscientious objectors will be tolerated. If a man reaches the age of 25 then the police will take note of him and medical authorities will examine him; if he is physically fit, marry he must; if he refuses, he will be treated as a deserter, deprived of all his civil rights and employment. If he has private means a quarter of the amount will be taken and given to the poor. Thus celibacy becomes an article of luxury, confined to those who can sacrifice a quarter of their income. If a recalcitrant husband seeks to avoid his obligations by travelling he must obtain a special permission; and, if he remains away too long, then he must marry a second time and bring his second wife home when he returns. Here we have a law enforcing not only matrimony but bigamy, the repopulation of Turkey being the one and only social duty recognised. If a man has performed his obligations to the State by keeping a wife for 25 years, should he then become a widower, he will not be absolutely forced to marry again; but, in that case, he must adopt one or more orphans. The one exception to the general compulsion on the male population to assume marital and parental responsibilities is that of the student; he may postpone his marriage till he has finished his studies. From one point of view the proposed legislation is sound; it insists on medical examination, and should, therefore, prevent the compulsory marriage of the unfit.

SCHOOL ABSENCE ON ACCOUNT OF SICKNESS.

A PRELIMINARY survey of 3786 children in the State of Missouri has been analysed by Dr. S. D. Collins, of the U.S. Public Health Service. Total attendances possible, absences due to sickness, and absences from other causes were recorded. With the exception of the 11 cases of trachoma the disorders and defects are very similar to those found among English children. A comparison was made of the amount of absence from school of children with no physical defect as against children with recorded physical defect. The numbers have been classified, quite correctly, into sex and age groups, but as all the observations are on the same children, for the sake of brevity the totals may be considered. Percentage absence from sickness is stated after each group, and absence from other causes placed in brackets. Total absences were, boys 3·3 (2·7), girls 3·6 (2·2), the difference mainly being due to the adenoid and tonsil group, boys 3·8 (2·5), girls 4·7 (2·4). Again taking all children, the percentage absence of those with no recorded defect was 3·2 (1·8), with defects of any kind 3·9 (2·8), with one or more decayed teeth 3·3 (2·4), with defective

vision 3·5 (2·5), adenoids alone and adenoids or tonsils associated with other defects 4·0 (3·3). Apart from vision, the differences, as might be expected, are consistent in the various age groups. When, however, the absences from other causes than sickness (given in brackets) are compared in these groups, variations just as great are noticeable, the sexes often being reversed in proportion. Dr. Collins concludes from his analysis that children with no defect were absent from school on account of sickness consistently less than those with defect. Children, also, with enlarged and diseased tonsils were absent more than children with no defect, and those with enlarged or diseased adenoids or tonsils associated with other defects were absent more than those with diseased or enlarged tonsils only. Decayed teeth showed little or no effect upon school absence, and defective vision failed to show a consistent effect on sickness absence. Absence from causes other than sickness showed variations somewhat similar to absence from sickness, the groups with defect being absent more than the groups with no defect. A report like this proves what valuable results may be obtained from a careful sifting of statistical material. We have here a praiseworthy attempt to utilise some of the mass of information contained on medical record cards, and largely wasted.

MIDDLESEX AND ST. LUKE'S HOSPITALS: COÖPERATION IN EARLY MENTAL TREATMENT.

WE have great pleasure in announcing that two new wards for male and female patients will shortly be established at the Middlesex Hospital for the treatment of early mental cases by members of the staff of St. Luke's Hospital, under the care of its trained nurses. This admirable scheme of coöperation is, we believe, the first instance in this country of an alliance between a large general hospital and a registered hospital for mental diseases. The scheme is not so much the result of recent agitation as the logical outcome of an idea which has been thought out and discussed for many years past. All cramping restrictions are to be removed and the two hospitals, by mutual coöperation in respect of funds, material, personnel, and experience in management, will have ideal chances in the treatment of early mental and functional disorders, with due regard to economy of time and money. A special out-patient clinic will also be established for dealing with border-line cases, and this will practically constitute a psychiatry section of the neurological department. The reasons which have induced the managements of the two hospitals to follow such a course have often been set forth in these columns, and are largely familiar to our readers. There is a natural disinclination among those suffering from early mental disorder to consult specialists at a hospital known to deal with only this class of disease, and it is reasonable to suppose that such patients are more likely to attend at a general hospital for treatment on the first appearance of symptoms. Treatment at a general hospital does not attach the stigma which is popularly connected with a hospital dealing only with mental disease, while the border-line cases intended to come under this scheme, if requiring further attention than can be given in the out-patient department, will be admitted as in-patients to the new wards at the Middlesex Hospital on the same footing as ordinary patients in the general wards. An additional benefit accruing to the patients will be that the full resources of a large general hospital will be at their disposal for physical examination, special methods of treatment, pathological investigations in properly equipped laboratories, and for any medical or surgical treatment required for their relief. In many cases it is hoped that certification may be avoided, and the prospect of cure offered without admission to a special hospital. We have little doubt that the results will justify the bold and far-sighted scheme arranged between the Middlesex and St. Luke's Hospitals.

SUBTERTIAN MALARIA IN BERLIN.

THE report[1] from Munich, dated Oct. 25th, that a considerable number of clinically severe cases of subtertian malaria have been observed recently in Berlin in persons who have never left the city, and who therefore must have been infected at home, will arouse no little interest. The provocative cause in the cases reported appears to have been, in almost every instance, an injection of salvarsan. Now it has been a matter of common knowledge for some time past to those interested in the subject that an injection of salvarsan or its derivatives, so far from destroying the malarial parasites in the blood-stream, may actually be the means of stimulating the parasites to renewed activity; and the practice of using arsenical preparations in this way may result in a severe, if not fatal, attack of pernicious fever. This undoubtedly happened during the recent war in the Near East. This being the case, practitioners should be warned against giving injections of arsenobenzol in cases of malaria save as a general stimulant. In Berlin it is understood that the Ministry of Health fears that subtertian malaria may have achieved a wider prevalence than is generally known to practitioners and this authority has issued a memorandum pointing to the necessity of having a blood examination made in doubtful cases of fever. If this report be confirmed by further work it is a matter of great ecological interest, for hitherto the subtertian parasite has been regarded as much the most strictly "tropical" of all the malarial plasmodia, requiring a high atmospheric temperature for its development in anopheles. It is, of course, possible for the infection to be introduced into the patient's blood-stream by injection through an imperfectly sterilised needle, previously used on a malaria patient. Instances of subtertian infection, hardly admitting of any other explanation, are known to have been produced in this manner.

THE PATHOLOGY AND TRANSMISSION OF KALA-AZAR.

THE occurrence of leishmania bodies in the intestinal tissues of man, especially the jejunum, formed the subject of a paper read by Lieut.-Colonel H. Marrian Perry before the Tropical Diseases Section of the Royal Society of Medicine on Nov. 6th. These parasites have been previously identified in the large intestine, but their occurrence in large numbers in the small gut does not appear to have been noted before. In the two cases studied the mucous membrane had undergone profound changes; the villi had become transformed into polypoid outgrowths united to the gut wall by slender strands of connective tissue, the cell elements taking place in this hypertrophy being mostly endothelial cells closely packed with leishmania bodies which appeared as minute endothelial tumours uniformly distributed throughout the bowel. In places these tumours had ruptured allowing the imprisoned parasites to escape. The parasitic infection of these tissues greatly exceeded anything previously observed in sections of liver or spleen from cases of this disease. An equally marked endothelial proliferation takes place in oriental sore and, by pressure on the blood and lymph-supply of the tissues, leads to vascular occlusion and consequent atrophy or necrosis. The changes in the small gut may have a bearing upon the wasting which is so distinctive of the disease. Reviewing the different methods by which transmission of the parasite from one man to another might take place, Colonel Perry pointed out that the frequency with which leishmania bodies had been recorded in blood-films by Patton and Knowles, and the comparative ease with which they could be cultured from finger-pricks, lent considerable support to the theory of transmission by some blood-sucking insect. On the other hand, the author was tempted to put forward a suggestion that escape of the parasite might take place from the body by the fæces, bodies

[1] Münch. med. Wochenschr., Oct. 27th, 1922.

resembling leishmania having been described in the intestinal mucus by Knowles and Mackie. Bacterial contamination, however, might prove a serious obstacle to successful cultivation of leishmania from infected fæces. In this connexion the resting or O body stage of the leishmania-like flagellates, as emphasised by Dr. R. Row, may have important bearing. This body, found in the gut contents of insects, such as the mosquito, bed-bug, or sand-fly, is much more resistant than the flagellate stage, and Row has suggested that a similar stage may occur in the life-history of *Leishmania donovani* and play an important part in transmission; possibly, too, a similar stage may occur in the fæces of kala-azar patients. In the *Indian Medical Gazette* for September, Major F. P. Mackie, I.M.S., discusses the diagnosis of kala-azar by the formol-gel reaction which he considers will prove useful in diagnosing this disease from chronic malaria. The test is both simple and striking. He also critically reviews the possible means of transmission. Direct injection of monkeys by feeding on infected tissues has been recorded by Archibald and Cornwall. Transmission by the skin is, of course, possible, but the occurrence of the parasite in this situation appears to be exceedingly rare. In Mackie's opinion the hypothesis of insect transmission is rapidly gaining ground. Apart from the observations of Mrs. Adie, which lack confirmation, Mackie and Swaminatti have described and figured curious bodies in the gut and salivary gland content of a bug taken from the bed of a kala-azar case. The sand-fly (Phlebotomus) must be regarded as a possible transmitter and requires further study, especially as this insect has been found naturally infected with flagellates resembling the similar stage of leishmania. Most laboratory animals appear to be susceptible to a transient infection with this parasite; a few, including mice, may develop signs of true kala-azar.

THE VALUE OF VACCINATION.

SMALL-POX is not at present on the increase in London, but it is common knowledge that large numbers of persons, young and old, are seeking protection in vaccination. In a letter to our correspondence columns the secretary of the National Anti-Vaccination League seeks to discourage them by questioning the value of vaccination, and it may be worth while to answer once again some misleading deductions. In her opening survey Miss Loat might have taken us further back than 1850 and shown us that small-pox was the greatest scourge that ever visited the world, carrying off hundreds of thousands of people at a time when vaccination as a preventive measure was unknown to the great mass of the population. And, again, towards the end of her letter she restricts her inquiry to the last 16 years, when to have pushed it back to the first four years of this century would have shown a period in which the deaths from small-pox were 45 times as many as those attributed to vaccinia. Our correspondent has failed to note that the epidemic of 1871 was of world-wide prevalence and of extraordinary virulence, and that those who died were mainly of middle age whose vaccinal protection had diminished with lapse of years. Moreover, the rate of mortality was much higher in countries without compulsory vaccination, and several of these countries as a result of their experience adopted compulsory vaccination. Glasgow is mentioned, but it is not made clear whether reference is to the 1904 report or the report on the outbreak of 1920. The facts, however, in each case are interesting and conclusive. In 1903–4 there were no vaccinated or even doubtfully vaccinated children under 6 months amongst the patients at all, whereas there were 30 unvaccinated, of whom 17, or 56·7 per cent., died. In the 1920 outbreak there was also a complete absence of cases under one year amongst the vaccinated and doubtfully vaccinated groups, but amongst the unvaccinated there were 15 cases, of whom 11, or 73 per cent., died. In a following paragraph our correspondent's argument, if we follow it correctly, is as follows: Vaccination does not prevent small-pox, and cases of small-pox amongst the vaccinated and unvaccinated respectively are to be expected in the same ratio as the vaccinated and unvaccinated in the general population. If this were so, the proportion of children born now being, approximately, 40 per cent. vaccinated and 60 per cent. unvaccinated, cases of small-pox occurring amongst vaccinated and unvaccinated children should hold the proportion of 4 to 6, whereas, we find that in England and Wales, as stated in the Ministry of Health's Report for 1920, there were no cases of small-pox among vaccinated children under 10 years of age, but 41 cases and 7 deaths among unvaccinated children under the same age.

ACUTE DISSEMINATED LUPUS ERYTHEMATOSUS.

Dr. Moses Scholtz,[1] dermatologist to the Graduate School of Medicine at Los Angeles, who records an illustrative case in a woman aged 31, points out that many writers do not sufficiently differentiate between the acute and disseminated types of lupus erythematosus. A case may be disseminated without being acute, and many cases of disseminated lupus erythematosus run a chronic course throughout. His own case is the sixth on record of lupus erythematosus in which the disease ran an acute course and the lesions were disseminated, and the eighth of 27 reported cases of disseminated lupus erythematosus to end fatally. Tuberculosis which for long was regarded as the sole cause of lupus erythematosus could be definitely excluded, and the only pathogenic factor present was a pyogenic nephritis which was probably responsible both for the skin lesions and the fatal termination. The close relationship between acute lupus erythematosus and erythema multiforme, which has been demonstrated by previous writers who have described border-line cases, is illustrated in the present case by the fact that the initial patches presented the typical discoid type of lupus erythematosus and that the subsequent disseminated lesions strongly suggested erythema multiforme. Dr. Scholtz suggests that the morphological transformation was due to the intensity and rapidity of the morbid process preventing the lesions from developing into the ordinary discoid type. The most striking feature of the present case was a hæmorrhagic exudate which developed on the initial patches on the face and the sternum at the acme of the acute stage. The exudate was diffuse, capillary, purely hæmorrhagic, and apparently due to intense vascular engorgement. Although hæmorrhagic lesions have been described in acute disseminated lupus erythematosus by a few other writers in the form of vesicles, bullæ, and hæmorrhagic macules, Dr. Scholtz has been unable to find any references to diffuse hæmorrhagic lesions such as were shown by his patient.

BRONCHOLITHIASIS.

ACCORDING to Dr. A. R. Elliott,[2] of Chicago, who reports an illustrative case, the literature on broncholithiasis or pulmonary lithiasis is surprisingly meagre in view of the fact that the condition has been recognised for centuries and is not so rare as might appear from the scanty attention paid to it. Dr. Elliott indeed is of opinion that if bronchoscopy were more often employed in the diagnosis of obscure chest conditions, especially obstinate cases of chronic cough, broncholithiasis would more frequently be discovered. More or less circumscribed nodular shadows usually located at the hilum of the lung and regarded as calcified bronchial glands are frequently revealed by the X rays. Calcified nodules in the lungs and adjacent structures are also frequently found post mortem. Tuberculosis, abscesses, bronchopneumonia, infarcts, foreign bodies, or pleuritic infections may have initiated the process leading to calcification. As long as those areas remain quiescent,

[1] Archives of Dermatology and Syphilology, October, 1922.
[2] Journal of the American Medical Association, Oct. 14th, 1922.

they do not give rise to symptoms, and their discovery is usually accidental. In the more chronic ulcerative forms of tuberculosis small particles of calcareous matter may become loosened in the process of cavitation or form in the stagnant mucoid contents of bronchiectatic dilatations, and be coughed up from time to time. Much the commonest form of lung concretion is that arising from calcified tracheo-bronchial lymph glands, which may perforate the bronchial wall and be discharged by coughing. Only a single stone may be expelled, or a large number at variable periods. As long as the stone remains quiescent no symptoms arise, but when it becomes the centre of active irritation or inflammation more or less severe symptoms resembling those caused by a foreign body in the bronchus develop—namely, paroxysmal cough, profuse bronchorrhœa, dyspnœa, and pain in the chest. Finally, after a severe fit of coughing accompanied with a rending pain or a sense of tearing in the chest, to which the terms "bronchial colic" and "stone asthma" have been applied, the stone is expelled, and great relief is at once experienced. Hæmoptysis usually accompanies or precedes the expulsion of a stone of any size. The physical signs of broncholithiasis are not likely to suggest a correct diagnosis. They are, as a rule, unilateral, and resemble those caused by bronchiectasis, lung abscess, or a foreign body. The correct diagnosis is not established until a stone has been expelled. Some of the cases assume from the first a chronic form which may suggest tuberculosis. In most chronic cases bronchiectasis or a lung abscess forms. Dr. Elliott's case, which occurred in a man aged 35, was an instance of multiple calculi of glandular origin which penetrated the bronchi by ulceration, and were expelled singly with the characteristic phenomena of stone asthma or bronchial colic. Chills, fever, hæmoptysis, and pain in the chest accompanied each expulsion. No bone disease was present, and tuberculosis was excluded. The primary ætiological factor was doubtful. As in other cases on record there appeared to be a marked constitutional tendency to the laying down of calcium salts at a point least capable of holding them in solution.

THE Bradshaw Lecture of the Royal College of Surgeons of England will be delivered in the Theatre of the College by Sir William Thorburn on Friday, Dec. 8th, at 5 P.M. The subject of the lecture will be the Surgery of the Spinal Cord.

A LECTURE on the Present Conditions of Small-Pox will be given by Dr. R. J. Reece, a senior medical officer of the Ministry of Health, in the Barnes Hall, 1, Wimpole-street, London, W. 1., on Wednesday, Nov. 29th, at 8.30 P.M. This lecture has been arranged by the Fellowship of Medicine in view of the present outbreak of small-pox and is open to all members of the medical profession.

THE Federation of Medical and Allied Services have planned a conference on Hospital Finance to be held at 12, Stratford-place, London, W., on Nov. 30th, at 3 P.M. The object is to hear and discuss the views of persons with special knowledge of the voluntary hospitals system, concerning the possibility of securing the future financial stability of these institutions. Lord Islington will preside, and the speakers will include Lord Hambleden, Sir Arthur Stanley, Sir Alan Anderson, Sir Napier Burnett, Dr. Gordon Dill, and Mr. E. W. Morris. Members of the governing bodies of all the principal hospitals in the London area are being invited.

GLASGOW UNIVERSITY CLUB, LONDON.—A dinner will be held at the Trocadero Restaurant, London, W., on Friday, Dec. 1st, at 7.30 P.M., Prof. W. P. Ker in the chair. Any Glasgow University men who have not received cards and who desire to be present are requested to communicate with the hon. secretaries at 1, Harley-place, N.W. 1.

RADIOLOGY IN RELATION TO MEDICINE.

JOINT MEETING AT MANCHESTER OF THE RONTGEN SOCIETY AND SECTION OF ELECTRO-THERAPEUTICS OF THE ROYAL SOCIETY OF MEDICINE.

A JOINT meeting of these Societies was held in Manchester on Nov. 17th and 18th, and was largely attended by radiologists, physicists, radiographers, and instrument makers. The programme of scientific and social events, arranged by Dr. A. E. BARCLAY, was of a varied and interesting character, and filled almost without interval the two days allotted to the meeting.

Short Papers.

The proceedings opened at the University at 3.30 P.M. on Nov. 17th with two short papers, the first of which was given by Prof. W. L. BRAGG on the subject of the Structure of Metals as Analysed by X Rays, an interesting development of his work on the X ray examination of the constitution of crystals. Prof. A. V. HILL next gave two short demonstrations of (1) the Hot Wire Sphygmograph, an instrument depending for its action on the alterations in the electrical resistance of a hot platinum wire caused by changes in temperature induced by minute air currents; this apparatus is likely to be of value in determining the time that the valves of the heart are open, the elasticity of the arterial walls, and in some cases the position of aneurysms; (2) The Psycho-Galvanic Reflex, an incompletely investigated phenomenon which is characterised by an altered electrical resistance between the hands (in the experiments shown), following psychical effects.

Prof. JACOBAEUS, of Stockholm, gave in English a lecture on the result of ten years' experience in the

Treatment by Division by Galvano-cautery of Pleural Adhesions,

under the control of the thoroscope. The object of the operation is to render complete the artificial pneumothorax induced for the treatment of tuberculosis of the lung. Prof. Jacobaeus pointed out that the presence of adhesions often prevented the desired complete collapse of the lung, and their division rendered much more successful that form of treatment. Under local anæsthesia the thoroscope is introduced between the ribs into the pleural cavity, so that the condition of the pleura with its adhesions can be observed. Through another intercostal space the galvano-cautery is introduced and the adhesions under direct observation are divided by a very dull red cautery. The results of the treatment were illustrated by a series of excellent X ray lantern slides of the chest, X ray observation being a necessary part of the treatment. The immediate risks of the operation are hæmorrhage, which is apparently only slight, with the use of the dull cautery, and infection mixed or tuberculous from lung cavities. The latter risk is not great if the adhesion is divided well away from the cavity. Adhesions may be divided on the lateral, apical, or diaphragmatic aspects of the lung. One of the difficulties is that the act of respiration makes the adhesions move up and down. The complications which may follow the treatment are: (*a*) Skin emphysema, which gives no trouble. (*b*) The immediate and delayed formation of exudates in a comparatively small proportion of cases. These usually clear up. (*c*) Empyema and lasting fever are more serious matters, but with good technique are, according to Prof. Jacobaeus, not of frequent occurrence, and are not necessarily fatal. Diagrams and tables were given, showing the results and improvement in patients' conditions following the treatment.

For the non-medical members of the Rontgen Society papers were read, at the same time as Prof. Jacobaeus's lecture, at the University by J. R. CLARKE

on the Measurement of High Voltages, E. G. MCKINNON on Storage Batteries, and V. E. A. PULLIN on the Examination of Metals.

In the evening a successful dinner was held at the Midland Hotel, under the combined chairmanship of Sir HUMPHRY ROLLESTON, President of the Rontgen Society, and Dr. ROBERT KNOX, President of the Section of Electro-Therapeutics of the Royal Society of Medicine. A notable feature was the friendly feeling shown between all representatives of the medical, physical, and industrial sides of radiology, and the free friendly interchange of views and experiences. Of considerable importance were Sir ARCHIBALD REID'S references to the formation of the British Institute of Radiology, in which he outlined a scheme for the distribution among its members of information concerning the most recent work and observations made by British and foreign workers, together with the use of a central institute and library.

On the morning of Nov. 18th visits were paid to the Ford Motor Works, the Metropolitan Vickers' Electrical Co., the Chloride Electrical Works, Hans Renold Chain Works, and Glover's Cable Works, all of Manchester. At the same time demonstrations of apparatus, methods, and cases were given at the Manchester and District Radium Institute, and at the X ray department of the Manchester and Salford Skin Hospital.

The New Radiological Department of Manchester Royal Infirmary.

At 2.30 P.M. the opening of the new radiological department of the Manchester Royal Infirmary took place. The chair was taken by Sir WILLIAM COBBETT, supported by Mr. GOLDSCHMIDT, Mr. MACDOUGAL, Sir WILLIAM MILLIGAN, Prof. RAMSBOTTOM, and Dr. A. E. BARCLAY. Sir HUMPHRY ROLLESTON declared the department open and gave an address which will be found on p. 1152 of this issue of THE LANCET.

Dr. A. E. BARCLAY outlined the history of the department, and gave a demonstration with lantern slides of the apparatus and construction of the department. He also referred with appreciation to the anonymous donor of £4000 for the purposes of providing apparatus for deep X ray therapy and research on the subject; also to Mr. Macdougal, whose gift of £5000 had made the equipment of the present excellent department possible. In 1908, when the use of X rays was first started at the new Manchester Royal Infirmary under Dr. Barclay, no special provision had been made for the department, and one room and a small dark room in the basement were set on one side for its activities. Since that time there has been a rapid and steady increase in the work done, and although the X ray department has until now remained in its present position more rooms have had to be added, and the staff considerably increased. Dr. Barclay illustrated the increase in the work done by the following table:—

	1908.	*1921.*
Total patients treated	1,923	10,721
Total number of treatments	8,641	63,880
X ray examinations	1,530	6,638
Plates used	1,856	9,314
Patients treated by X rays	59	645
Number of treatments	862	8,698
Massage and Electrical Department—		
Patients	334	4,238
Treatments	6,779	57,242

The new department was one of the best, if not the best, in this country. In general design it was large, light, and airy. Specially arranged rooms were constructed by which in a regular and systematic sequence the whole process of X ray examination could be thoroughly and rapidly carried out from exposure and examination through development to inspection of the plates, the writing of reports, and the necessary demonstration. The special feature was a large demonstration room where students could be taught and demonstrations given by the hon. medical staff. A well-constructed examination couch was also provided, together with large viewing boxes and an automatic lantern which changed the plates shown without the aid of an assistant. Other special features were the enclosed wires, the excellent overhead switch system, and the provision for general and deep X ray therapy with adequate protective system for the operators. The walls of the rooms were coated with plaster mixed with barium powder which was cheaper, more convenient, and more sightly than lead plate protection.

These were only a few of the many items of interest. After Dr. Barclay and others had spoken, Sir HUMPHRY ROLLESTON declared the department open. The company next inspected the new department and discussed in detail its many improvements and novelties.

The meeting was one of the most interesting radiological assemblies which has taken place, and should yield admirable results in the closer coöperation engendered between different branches of medicine, science, and commerce concerned with radiology.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

THE PRESENT POSITION OF THE MEDICAL PROFESSION.

THE present position of the medical profession, not only in this city but throughout Germany, is sad. Medicine was never a lucrative vocation in Germany, but since the war, and by reason of the depreciation of currency, the position is wellnigh desperate. Club practice has always played an important rôle in the income of the average medical practitioner. Before the war only workmen and employees earning not more than 2000 marks—equivalent then to £100 a year—had to be compulsory members of a sick club. By recent legislation the amount of wages and salaries where membership is compulsory is fixed at no less than 210,000 marks, but a clause of the law provides that compulsory members may become voluntary members of their club even when they earn more than the above sum or cease to work at all. A lady typist, e.g., having married a well-to-do man and ceased to work, may continue her membership by voluntary contribution, and so may a clerk who has established himself in a business of his own. Cases have, indeed, been reported where such club members have arrived at a doctor's residence in lavishly furnished privately-owned motor-cars. About 70 per cent. of the adult population now belong to clubs.

The middle-classes, especially "rentiers," who before the war formed the staple practice of many practitioners, have suffered badly, and now, through the depreciation of the currency, are unable to pay fees for medical attendance. Urgent cases excepted, the consulting rooms of medical men whose clientele belonged to the middle- and upper-classes of the population are therefore deserted. Those who have made money by profiteering during and after the war like to consult one of the fashionable physicians, and they change their medical attendant as they change their shirt; thus the medical adviser, who was the friend of the family sometimes for several generations, is becoming extinct. There are, of course, specialists of international renown and some medical men with wide foreign connexion, especially through hotels, who earn much money, but they are exceptions.

The Increasing Ratio of Doctors to Population.

Notwithstanding the heavy losses sustained by the profession during the war, the number of medical men has increased in relation to population because many practitioners from the lost territories—Alsace Lorraine, Posen, Upper Silesia, to mention only the most important—have settled in the other parts of Germany, preferring the larger towns, and in particular Berlin. Moreover, during the war to meet the needs of the army, the duration of the medical curriculum was cut down and medical students were qualified after easy examinations. In August, 1914, 2000

qualifications were granted at once in this manner to medical students. The great majority of the medical officers of the old army, which before the war had a strength of 800,000 men and is now reduced to 100,000, must be dismissed, and as this happens the army officers engage in civil practice. It is clear that there is not private practice for such numbers, many of whom are compelled to apply for club appointments.

Club Practice.

In club practice the so-called "free-choice system" is now adopted nearly everywhere throughout Germany. Under this system a sick club pays a fixed sum for each of its members to an association of medical men who undertake the treatment of the club members; the club members may choose their medical attendant among the members of the association; the sum paid by the club is then shared out by the committee of the association to the individual medical men according to the number of patients attended and the operations performed by each. Every medical man, agreeing with the terms of the association, may join it and thus take part in the treatment of the club members. A club member requiring medical attendance has to forward to the medical man he has chosen a coupon, for which the medical man must treat him for a month. The value of the coupon was for Berlin in the past quarter 40 marks, a sum equalling before the war £2, but worth to-day less than a halfpenny. Even if the case requires only one or two consultations within a month this remuneration is bad enough, and in cases requiring many consultations it amounts to gratuitous treatment. For visits above a certain number an additional sum of 6 marks is paid and a special tariff exists for operations, but medical men can live from club practice only when the number of their patients is enormous. This leads to abuse.

There are a few club doctors in Berlin and elsewhere who receive 60 and more new cases daily in their consulting room and perform 20 visits daily as well. Their popularity is sometimes explained by the fact that they are more liberal than others in prescribing tonics or giving certificates for sick pay. The committees of the clubs, which form a big union throughout Germany, are well aware that the fees they pay are insufficient, but they point out that this is due to the free-choice system where nearly every medical man must be admitted to club practice, so that the sum paid by the club is divided among too many parties. They state that if they were allowed to appoint 30 per cent. of the medical men now engaged in club practice as medical officers with a fixed salary, the salary could be made sufficient to allow the appointed medical men to live on it. The suggestion was, of course, rejected by the medical unions because they are of opinion that when they were enacted about two-thirds of the medical profession would lose their income, whilst the remainder would be at the mercy of the clubs.

The Remedy Commences.

In so far as overcrowding in the professional ranks is concerned the remedy is commencing. The unsatisfactory condition of the profession has already caused many medical students to give up their studies to become clerks in banks, government and other offices, being unable or unwilling to pay heavily through a curriculum of six years, at the end of which they will not be likely to earn a living. Already, in order to pay their fees many students are compelled to work throughout their holidays, or during the evening after lectures, as private secretaries, accountants, or even as waiters. And not only students are leaving the medical profession, but some young qualified medical men are doing the same. They find medical qualification of no use because they cannot afford to meet the initial expenses, which are indeed enormous; with house rent, cost of a servant, they must be calculated at about 500,000 marks. An examination table costs 20,000 marks, a cabinet for medical instruments costs 18,000 marks, a washstand 16,000 marks, apparatus for the examination of urine 7000 marks, scissors 220 marks, a pocket dressing-case 5000 marks; it must be remembered that the prices rise from day to day with the decrease of the currency, and the above prices, which are based on an inquiry made at the Medical Stores, Ltd., some days ago, are already obsolete.

The condition of the medical profession is not discussed by the medical press alone. The lay press has exposed the situation and the general public is alarmed at reading of the state of things. They feel that the existence of an efficient medical profession is an absolute necessity for a civilised nation and that the work of a medical man must naturally suffer when he has no sufficient means of existence. As this view becomes more general some method of reform may follow.

Berlin, Nov. 15th.

CZECHO-SLOVAKIA.

(FROM OUR OWN CORRESPONDENT.)

School Medical Service.

THE Ministry of Health has issued model rules and regulations for school medical officers for adoption by all local school authorities where such officers are employed. These regulations make it the duty of the medical officer to inspect school premises, to propose recommendations for the improvement of sanitary conditions, to examine all school-children, before admission at the beginning of every school year, for signs of epidemic diseases, and to keep them under observation for six weeks afterwards in order to ascertain which children will require permanent medical supervision during the school year. The medical officer must also advise teachers as to the position of children in the schoolroom with regard to their sight, and in suitable cases he must recommend transference into special classes for defectives. Records must be kept of examination of every school child at least twice a year; the development of children, with special reference to their physical education, must also be watched. Children for whom compulsory exercises are unsuitable are to be excluded and the general physical education must be supervised; personal direction of special classes for correction of physical defects is also required. Special attention is to be paid to infectious diseases in coöperation with the health authorities. Hygiene classes are to be given to the higher grades of school-children. In emergencies the medical officer can take independent steps, subject to the later approval of school authorities. He is to take part in meetings of the teaching staff in an advisory capacity, with voting power concerning health matters. Salary and office hours should be agreed upon by contract. The relationship between the school medical officer and the school nurse is not defined, but it is stated that the former has the right to investigate the child's home surroundings with regard to nutrition, housing, and other social conditions. The school medical officer must only treat children in emergencies; otherwise he should only recommend the necessary treatment to parents and school authorities.

Prostitution in the Republic.

The Ministry of Health has published statistical data on prostitution which throw more light on the campaign against this evil. There were 1748 prostitutes subject to control in the Republic when the recent Venereal Diseases Law was promulgated; 346 of them were in Prague, where the number of prostitutes has steadily decreased since the end of the war. It is estimated that there are 2000 professional prostitutes in the city, and some 10,000 in the whole Czecho-Slovak Republic. Thus a great deal of machinery would be required to bring all these women under reliable medical control. The results of an experimental reporting of venereal diseases without any giving of names, which was carried out by the Ministry of Health during the month of February, 1921, gave some idea of the sources from which venereal infection was acquired. In the given period 21,466 cases were reported to the Ministry;

23·6 per cent. of the male infection in this year was acquired in brothels, and 37·2 per cent. from "secret" prostitutes. Thus, controlled prostitution is no less dangerous than free prostitution; the difference between the percentages is comparatively slight, while there were at least five times more secret than registered prostitutes. If the control of prostitution had affected the incidence of venereal diseases, the result should be reflected in the army incidence, which is compiled very carefully and published each month. Although all brothels were abolished on Sept. 1st, no change in the incidence-rate among the soldiers can yet be detected. It seems safe to conclude from these figures that the abolition of control was a wise step, experience having demonstrated its uselessness.

First Aid Service.

The first aid service is being organised by the Czecho-Slovak Red Cross on a State-wide basis, with the assistance of the voluntary fire brigades which exist even in the smallest communities. The members of fire brigades are grouped in small units and are called Samaritans; these units in a sanitary district form a corps, with the district health officer as their instructor. The provincial and State organisations are linked with the machinery of the Red Cross, and the Samaritans are being trained in first aid by means of courses given by local physicians. The physicians use a text-book written by the originator of this movement, Dr. B. Welz. The Samaritans receive a standard first aid outfit and a small booklet with the necessary instructions. The movement originated some two years ago, and has spread very rapidly throughout the country, the numbers of the Samaritans having grown to hundreds of thousands; its success is due to the interest shown by the voluntary fire brigades.

Temperance Legislation.

The Ministry of Health has issued rules and regulations for the working of the Holitscher Prohibition Act. Beverages containing less than 0·5 per cent. of alcohol are not to be considered as alcoholic drinks. It is forbidden to sell alcoholic drinks to all persons under 16 years of age; the owner of a bar or saloon is obliged to refuse such drinks to every person who is evidently younger than 16 years, and has the right to demand documentary proof in doubtful cases. Only beer and wine can be sold to persons between 16 and 18 years of age. In dancing halls and entertainments only beer and wine can be sold. Police authorities are entrusted with the enforcement of the law, and supervision rests with health authorities, under the direction of the Ministry of Health.

VENEREAL DISEASES IN SWITZERLAND.

(FROM OUR OWN CORRESPONDENT.)

SOME time ago I wrote about the occurrence of venereal diseases in Switzerland and of the work of the Swiss Association for Combating Venereal Diseases. One of the first actions of this body was to urge an inquiry into the spread of these diseases; the matter was taken up by the Federal Health Office, and all general practitioners, venereal specialists, and hospital officials were requested to notify every case of gonorrhœa, syphilis, and soft chancre which came under treatment from Oct. 1st, 1920, till Sept. 30th, 1921. Thanks to a Government subsidy, payment was made for each notification. No names of patients were required. The Swiss Medical Association urged its members to make the inquiry a success. The first results have just been published, and the following figures may be of interest. Total cases notified, 13,112 (8972 males, 4140 females). Gonorrhœa, 5340 males, 1860 females; syphilis, 3341 males, 2155 females; soft chancre, 104 males, 11 females; combined cases, 187 males, 114 females. The cantons with large towns give the highest figures; the mountainous cantons of Central Switzerland and Appenzell give low numbers, the latter only provides two cases. Obviously the results of such an inquiry leave room for doubt; the figure given for females with gonorrhœa, for example, is in most districts obviously too low. When Zurich records 1491 males and 541 females, and Geneva 665 males and 139 females, we may fairly doubt the correctness of the proportion. Generally speaking, the figure of recorded cases of gonorrhœa in a medical inquiry must always remain too low, because many cases are treated by quacks and chemists. On the whole, those in charge are satisfied with the inquiry. Fortunately in a country like ours it is easy to apply cross-tests and to make supplementary inquiries in order to ascertain that the notification was carried out properly, but a certain margin of error must always remain.

Another indication of the prevalence of venereal diseases in Switzerland is given in the annual report of the Dermatological Clinic of Zurich University. In 1921 216 cases of fresh gonorrhœa and 93 of syphilis were treated in this institute. It is interesting to note that the number of cases of syphilis shows a marked falling-off. In the years 1918–20 the average number was 140. The cause is probably the fact that in Zurich, as in other Swiss towns, the foreign element of the population has considerably diminished. The Swiss Association for Combating Venereal Diseases, the President of which is Dr. Dubois, of Geneva, is making great efforts to spread knowledge amongst the population. Through its action a film showing the dangers of venereal disease has been shown in the principal picture-houses of the country.

Public Health Services.

VACCINATION IN PANEL PRACTICE.

IN view of the outbreak of small-pox in London and the request for vaccinal protection by numbers of insured patients, the London Panel Committee asked the Ministry of Health to define the position of practitioners under the N.H. Insurance Acts. The answer was as follows:—

Ministry of Health, Whitehall, S.W. 1.

SIR,—In reply to your letter of the 7th instant, I am directed by the Minister of Health to state that there is nothing in the Terms of Service which excludes vaccination or other forms of preventive treatment from the obligation which an insurance practitioner undertakes provided that the treatment is of a kind which can, consistently with the best interests of the patient, be properly rendered by a general practitioner of ordinary professional competence and skill.

It is for the practitioner to decide in the first instance whether any particular form of treatment, preventive or otherwise, is in the interests of the patient's health, but in general he would be expected to give the same treatment that he would advise one of his private patients to undergo in similar circumstances. In the view of the Minister the fact that the treatment could be obtained from a public vaccinator would not in itself justify an insurance practitioner in refusing to vaccinate one of his insured patients who desired him to perform the operation.

With regard to the question of payment for the vaccine, an insurance practitioner who vaccinates one of his patients should himself provide the vaccine and claim payment from the Insurance Committee, on the basis of the Drug Tariff, under Part II. of the Committee's Distribution Scheme.

A supply of vaccine from the Government Lymph Establishment is made available for the use of the Public Vaccinator only and for Medical Officers of Health for the vaccination of immediate contacts of persons suffering from small-pox. This supply, therefore, does not affect the practitioner's right to receive payment from the Insurance Committee for vaccine provided by him for his insured patients.

I am, Sir, your obedient Servant,
(Signed) T. LINDSAY.

The Secretary of the London Panel Committee has issued a circular informing practitioners of their obligations towards the insured persons upon their lists in regard to vaccination and summarising the correct procedure.

"You must provide the vaccine lymph yourself and must not order it by means of a prescription given to an insured person in the way in which the supply of drugs, &c., is obtained. In order to obtain a refund of the amount expended in the purchase of vaccine lymph the following

procedure must be closely followed: 1. A prescription form should be written in respect of each insured person vaccinated and this, together with (2) a Form D.6 (obtainable from the London Insurance Committee on application), and (3) the invoice for the lymph should be sent to the London Insurance Committee. Repayment may be expected within one month."

Correspondence.

"Audi alteram partem."

THE EXPERIENCES OF AN ASYLUM PATIENT.

To the Editor of THE LANCET.

SIR,—My attention has only just been called to a review of this book in your issue for Oct. 21st. Though rather late in the day, I should like the opportunity of making some comments upon it.

The reviewer contends that I was guilty of a breach of professional etiquette in quoting and commenting upon the letter of Dr. Percy Smith to Sir George Savage, which was one of the grounds upon which Mrs. Grant-Smith obtained her release. I do not agree with this view at all. Mrs. Grant-Smith had applied and paid for the opinion of Dr. Percy Smith. That this opinion was sent by Dr. Percy Smith to Sir George Savage instead of to Mrs. Grant-Smith does not constitute this a "private letter." The letter was communicated to the Board of Control, and was in due course sent to one of Mrs. Grant-Smith's brothers, who, in the absence of the petitioner, was acting as her representative. He, as I understand, sent it to Mrs. Grant-Smith's solicitors, who forwarded her a copy. It is absurd to call this opinion, on the strength of which Mrs. Grant-Smith was discharged, a "private letter." It was the "opinion" she had asked and paid for, and comment upon it was just as legitimate as upon Sir George Savage's "opinion," which is also quoted.

Upon other parts of the review with which I am not in agreement with the reviewer I need not enter. For instance, the statement that "insane delusions" may persist indefinitely after recovery is not in accordance with my own experience. In such cases I should deny the recovery. Again, I do not use Mrs. Grant-Smith's case "to foment prejudice against the proposed reception of voluntary boarders in county asylums." True, I distrust the wisdom of admitting voluntary boarders into asylums, public or private, or into any institutions under the jurisdiction of the Board of Control. I think they should be admitted into mental nursing homes or into special wards set aside in general hospitals, and should only come under the jurisdiction of the Board of Control after they are certified, though I admit the existence of difficulties in either case.

As to the credibility of Mrs. Grant-Smith's story, this is entirely a matter of personal opinion. I have not the least doubt myself that it is true in every detail, and if the reviewer was as conversant with all the facts as I am he might also become of this opinion. There is an overwhelming mass of independent evidence as to the truth of such experiences as Mrs. Grant-Smith's. We are only waiting for a favourable opportunity of bringing this forward. Meanwhile, the reviewer might read with profit "The Revelations of an Asylum Nurse," published in *Truth* for September-October.—I am, Sir, yours faithfully,

London Nov. 14th, 1922. MONTAGU LOMAX.

*** Anyone consulting the review will see upon what a minor point our reviewer and Dr. Lomax disagree. But Dr. Lomax, after saying that he need not do so, discusses other parts of the review with frankness. He denies wishing to prejudice an administrative course the wisdom of which he distrusts; and he denies the existence of a phenomenon which other psychologists admit, and which would alter the credibility of any witness. There is, it appears, more to come, but this supplementary evidence cannot be believed by those who have not heard it.—ED. L.

THE PATENTING OF INSULIN.

To the Editor of THE LANCET.

SIR,—It has long been the tradition of medicine and the medical sciences in this country that to patent a discovery which is or may be of value in the treatment of human disease is a thing that is not done. The announcement is now made that the University of Toronto has patented insulin and the process of its preparation, and that our Medical Research Council has accepted as a gift from the University the patent rights in this country. Assuming that the patent is valid, it seems to follow that no one can make and try the effect of this new pancreatic extract without leave of the Council—a situation which may well shock anyone accustomed to the free air of scientific progress. I am not sufficiently acquainted with patent law to know exactly how far and under what circumstances this control can be exercised. It certainly gives the Council the power to prevent responsible firms such as Burroughs Wellcome and Co. putting their trained scientific staff and all their accumulated experience of manufacture and marketing at the service of the public. But it also appears to give control in cases where there is no, or only an oblique, question of private financial profit. Suppose, for example, the staff of my own hospital and medical school desired to prepare insulin and try it, have we first to ask leave of the Council? Suppose one of my friends in general practice comes to me, as one having laboratory facilities at my disposal, and probably enough common-sense to follow the described process of preparation, and asks me to make some insulin for him to try on a patient, have I to reply that I must first get permission from Whitehall? What is the position of a man with laboratory skill and experience who engages also in medical practice, and to whom in consequence the possession of insulin made by himself may be a pretty direct source of gain? I am told—the information may be wrong—that in all these instances the Medical Research Council could obtain an injunction restraining us from pursuing knowledge and the betterment of disease in our own way.

The reason—I should rather call it the excuse—put forward for this exceptional procedure is that it is, in this exceptional instance, necessary to protect the public from disappointment owing to inactive preparations and from danger arising from extracts of unexpected potency. Real as such difficulties may be with drugs such as salvarsan, of which the therapeutic dose is a large proportion of the poisonous dose, they are largely illusory in the present case. Inactive preparations are easily recognised by their failing to have any effect; they are identified with certainty in two or three days, which is not a very serious delay in a treatment which will continue for many months or years. Medical men can surely be credited with enough common-sense to avoid such useless extracts, and manufacturing chemists be trusted for their own sakes not to put out a fraud which is so easily detected. The danger of giving too large a dose, and so producing the very curious train of symptoms which follows on the reduction of the blood-sugar to too low a level, raises a difficulty which is common to several potent drugs, and can be met as in other cases by proceeding with caution. And with insulin a safeguard is readily available which does not exist in the case of, e.g., arsenicals or adrenalin or digitalis, for a handful of sugar by the mouth at the first appearance of the symptoms of overdosing will apparently at once correct the error.

No one will question the desirability of having available for general use preparations of drugs of known and standardised strengths. To attempt to achieve this by a process of monopoly and control seems to me altogether antagonistic to the freedom which should be the atmosphere of a body devoted to the prosecution of medical research. The whole business is a resuscitation of "Dora," and I most sincerely hope that the Medical Research Council will withdraw from their position and not set such a bad

example to anyone who happens across a novel therapeutic procedure of value.

I am, Sir, yours faithfully,

A. E. BOYCOTT.

Medical School, University College Hospital, W.C., Nov. 18th, 1922.

*** The statement of the Medical Research Council should, we think, have made the position clear. The Council accepted the gift of the University of Toronto with the patent provision already made. So far from preventing free research work, without which progress towards the establishment of this remedy is impossible, the Council are using every effort to initiate and assist it. As the results emerge they are certain to be published freely, placing individual workers, as well as great manufacturing firms, in a more advantageous position to assist. We feel that our distinguished correspondent is a little previous in his apprehensions.—ED. L.

THE NORMAL INFANT'S CHEST.

To the Editor of THE LANCET.

SIR,—Nothing was further from my mind than to criticise unfairly the excellent work that Dr. Paton and Dr. Rowand have set out to do. The basis of their work being, however, founded upon the radiological aspect, to this they must adhere, and my one desire in writing was to emphasise the vital importance of great precision in radiography of the chest. I may say that I have read very carefully their description of the method adopted by them, and I think all radiologists will agree with me that to place the patient upon his back with the tube overhead is to make precise centering almost impossible; at the very least the mediastinum and cardiac shadows must be to some extent distorted. The writers do not say how precisely they centre the overhead tube, and this is a difficult matter under the most advantageous conditions.

I am sorry to learn that the Scottish mother is so much less easy a person than is her southron sister. In London at any rate I had no difficulty with the mothers; they gave me every assistance and themselves bandaged their babies with flannel to the padded board and were greatly interested in seeing how much happier the babies were than previously when it required at least two people to hold them down.

Anything issued under the ægis of the Medical Research Council ought to be as perfect in detail as it is possible, and I can only regret if Dr. Paton and Dr. Rowand mistake my motive in writing; at all events I, for one, shall look forward with great interest to further articles from their pen on a subject of such vital importance.—I am, Sir, yours faithfully,

London, W., Nov. 20th, 1922. STANLEY MELVILLE.

DISPLACEMENT OF THE TRACHEA IN PULMONARY FIBROSIS.

To the Editor of THE LANCET.

SIR,—Observations during the last few months have convinced me that displacement of the trachea in the neck is one of the most helpful signs in cases of chronic pulmonary disease, but I can find no mention of it in any of the leading text-books on diseases of the chest or manuals devoted to clinical examination. Displacement of the trachea in the neck means displacement of the upper part of the mediastinum, and vice versa; and, unless definite thyroid enlargement is present, inspection and palpation in Burns's space will reveal any displacement that is worth considering. I have tested these facts by means of X ray controls.

The estimation of the amount of fibrosis present is perhaps the most important piece of information to be derived from the clinical examination of cases of chronic pulmonary tuberculosis. Apical fibrosis always causes either falling in of the chest wall or displacement of the upper mediastinum, or both conditions in varying degree. The presence and degree of the first are self-evident; the second it is more difficult to recognise, especially on the right side of the chest, and more difficult still to measure, except by means of the displacement of the trachea in the neck. If the trachea is displaced in the neck and the heart is displaced little or not at all, the fibrosis is apical. If the fibrosis is purely basal (and therefore probably not tuberculous in origin) the heart and the trachea are both displaced.

I would claim, therefore, that displacement of the trachea in the neck (1) is a readily recognisable sign; and, in the absence of a good radiogram, (2) is the most important sign of displacement of the upper mediastinum; and (3) an essential sign for the estimation of the degree and position of pulmonary fibrosis.

I am, Sir, yours faithfully,

G. T. HEBERT.

Tuberculosis Department, St. Thomas's Hospital, Nov. 17th, 1922.

THE HOT OPERATING THEATRE.

To the Editor of THE LANCET.

SIR,—I live so far away that my criticism of Mr. R. P. Rowlands's interesting note in your issue of August 5th must, of necessity, lose much of its point. But as I am engaged in building new operating theatres in the British hospital in this city you can easily understand that I am more than passingly interested. I am one of those who believe in the hot operating room. I cannot conceive of anything more injurious to a patient than to expose, not only the skin of his abdomen, but also his intestines, to a temperature 30° or more below anything they have ever experienced before; it may be 40° below should the patient have fever, or the room be cold, as it is so often in emergency operations.

I sympathise with Mr. Rowlands in having to operate in a hot, stuffy, ill-ventilated atmosphere. Nothing could be worse for him or for his patients, and the effects, as he has pointed out, are likely to be disastrous. But that does not prove anything against having a hot theatre; it only shows that the arrangements supplied to Mr. Rowlands are anti-hygienic and antiquated. The reason hot theatres are usually oppressive is that it is almost impossible to convince architects of the necessity of supplying an apparently excessive heating installation. The result is, that, in order to get the proper temperature, it is necessary to have every opening hermetically sealed, when the complete absence of air currents produces an intolerable atmosphere, apart from the vitiation produced by the vapour of anæsthetics and the exhalations of human beings.

Now for the remedy. In the first place infection by air, no matter how important it may appear to the theorist, may be neglected in practice. There need be no fear of frequently changing the air in the theatre, the best way of doing it being to have plenty of windows, and to open them wide between, not during, operations. No surgeon need be afraid of fresh air, but every surgeon who understands evaporation and latent heat will dread a draught. To enable frequent change of air to be carried out the following arrangement, which is what we are putting up here, will be found efficient. Two operating rooms have been built, separated by a sterilising room. There is nothing in the operating room except the table. The patient is placed on the table and anæsthetised, the instruments are wheeled in from the sterilising room, where the surgeon and his assistants have made their preparations, and the operation begins. At a convenient time patient No. 2 is brought into the other room and operated on. As soon as patient No. 1 has been removed, room No. 1 is opened up for a few minutes, and the air completely changed by a through draught. Now the excess heating plant, in this case steam radiators, is turned on, and by the time the surgeon is ready for patient No. 3, room No. 1 is up to standard heat (75° to 85° F.), when the excess plant is turned off. There is no moisture, there is no stuffiness, and the surgeon is not bathed in sweat,

for there is a bathroom attached to the operating suite where he can divest himself of his street clothes and don a suit of light (sterilised) pyjamas—a suitable attire for the temperature in which he is going to work, beside being more in keeping with modern ideas of asepsis. The usual sterilised overalls, caps, masks, rubber gloves, &c., are, of course, worn over the pyjamas.

A word as to heated tables versus heated rooms. First of all, what man in his senses, feeling ill, would leave his cosy fireside, expose his abdomen, and lie in the cold hall on a hot-water bottle of any dimensions you like, and expect thereby to improve his health? What happens in practice? As far as I can remember, I have been shipmate with six heated tables. They all ended the same way. If the heat was anything like efficient, a patient at some time got badly burnt. To prevent this, such a thick layer of insulating material had to be placed between the patient and the source of heat that for all practical purposes the heat might as well have been absent.

No, Sir; hot, stuffy, ill-ventilated, moisture-laden atmospheres are not the correct thing for operating rooms, but a dry, well-ventilated atmosphere, nicely heated to a temperature of 75° to 85° F., will help many a patient to clear the jump who, in other surroundings, must have stumbled badly.

I am, Sir, yours faithfully,

ROBERT E. HALAHAN, M.D., M.Ch., F.R.C.S.,
Surgeon to the British Hospital, Buenos Aires.
Buenos Aires, Sept. 25th.

VACCINATION.

To the Editor of THE LANCET.

SIR,—Referring to paragraphs published in various papers recently, I would like to point out that many of those who write of the "small-pox peril to Britain" at the present time can have no knowledge whatever of the ravages of small-pox in the past, when the majority of the people of this country were vaccinated. Here are the figures for small-pox deaths in ten-yearly periods from 1851:—

1851–1860	41,939
(First compulsory Vaccination Act passed in 1853.)	
1861–70	34,212
(Second compulsory Vaccination Act passed in 1867.)	
1871–80	57,046
1881–90	12,279
1891–1900	4,058
(First and most indifferent Conscience Clause, 1898.)	
1901–10	4,286
(Second Conscience Clause, 1907.)	
1911–1920	140
(Between 1908 and 1920 3,532,176 children were exempted in England and Wales.)	

People talk of the epidemic of 1871–72 but apparently forget that at that time 97½ per cent. of the population of this country over 2 years and under 50 had either been vaccinated or had the small-pox. This was the declaration of the Government medical official who gave evidence before the Select Committee which sat in 1871 to consider the harshness or otherwise of the Vaccination Act of 1867. With the country better vaccinated than at any time in its history we then had an epidemic which killed 44,000 persons.

As for the Glasgow figures quoted in the circular issued by the Baby Week Council, they are not worth troubling about for the simple reason that they have not been checked independently. When the medical officer for Glasgow investigated his own figures in the small-pox outbreak of 1903–4 he found that quite a number of those down as unvaccinated had actually been vaccinated, and he admitted this in his annual report for 1904. We know that in the outbreak referred to in the circular a vaccinated baby of two months died of small-pox. There were probably many other similar cases. It has also to be remembered that in outbreaks of small-pox in slum quarters the babies and little children attacked are likely to die. In former years when the majority of children were vaccinated, vaccinated children died of small-pox when attacked. In these days when the majority of the children of the working and lower classes remain unvaccinated it would be curious if any vaccinated child were even attacked, much less died of this disease.

Readers should contrast the Glasgow figures with those for Nottingham the following year. The majority of the cases at Nottingham were unvaccinated, whereas the majority at Glasgow were vaccinated, yet not a single patient at Nottingham died, while some 20 per cent. of the Glasgow patients died. The same thing happened at Middlesbrough in 1921 and at Colne Valley in 1921–22—a majority of unvaccinated cases and not one death. On the other hand, vaccination killed 19 infants in 1920, as officially admitted in the Registrar-General's report. During the last 16 years nearly four times as many infants under 5 years of age have been killed by vaccination as have died of small-pox.

The "scare" which is worked up whenever a case of small-pox arises is deplorable, and it is strange that newspaper editors should allow their columns to be used in this way.—I am, Sir, yours faithfully,

L. LOAT,
Secretary, the National Anti-Vaccination League.
25, Denison House, 296, Vauxhall Bridge-road,
London, S.W.1.

*** We comment elsewhere upon some of Miss Loat's points.—ED. L.

FORAGE OF THE PROSTATE.

To the Editor of THE LANCET.

SIR,—I have been much interested in the letter of Dr. Arthur Finegan concerning "Forage" of the prostate in THE LANCET of Nov. 11th. The method he describes is by no means new to this country. Mr. Canny Ryall showed it to me at All Saints' Hospital some years ago, and he has been using it to my knowledge both in his practice at the hospital and in private since 1916–17. I learnt the method from him at All Saints' Hospital and have used it myself on very many occasions with excellent results.

The process consists essentially in cutting a V- or U-shaped longitudinal trench in the prostate by means of the electric current, thereby removing the obstruction caused by its hypertrophy. The instruments which can be used for this purpose are an operating convex sheathed cystoscope or an operating cystourethroscope, and each will be found to have advantages in individual cases. The pain or discomfort caused by the actual operation is trivial if the urethra and bladder have been suitably anæsthetised with a local anæsthetic. In addition, in very nervous patients the site of cauterisation may be infiltrated with a solution of novocaine introduced through a special hypodermic needle invented by Mr. Canny Ryall, and attached to the end of a ureteric catheter. This needle can be implanted into the prostate under direct ocular observation.

The reaction after this operation is no more than that after any other urethral or bladder manipulation, and in the majority of cases the patient is able to proceed about his business directly afterwards. Some care and rest for the remainder of the day is, however, advisable if possible when one considers the average age of the patients afflicted with prostatic hypertrophy and the possibility of defective renal function. In my opinion it cannot replace the operation for enucleation of a uniform prostatic hypertrophy owing to the mass of tissue which it would be necessary to destroy. But even in such cases it may be used as a palliative procedure when circumstances render the major operation impossible. I am, Sir, yours faithfully,

H. L. ATTWATER, M.Ch. Camb., F.R.C.S. Eng.
London, W., Nov. 14th, 1922.

ROYAL INSTITUTE OF PUBLIC HEALTH.—The Harben lectures will be delivered in the lecture theatre of the Institute, 37, Russell-square, London, W.C., by Prof. Theodore Madsen, on Dec. 1st, 4th, and 5th, at 5 P.M., the subjects being Specific and Unspecific Antitoxin Production, Antitoxic Treatment, and the Influence of Temperature on Antigen and Antibodies.

The Services.

ROYAL ARMY MEDICAL CORPS.

Temp. Maj. A. G. W. Bowen (Fleet Surg., R.N., ret.), relinquishes his temp. commn. on account of ill-health and retains the rank of Maj.

Temp. Capts. R. W. Long and E. G. S. Hall relinquish their commns. and retain the rank of Capt.

TERRITORIAL ARMY.

Maj. D. Macnair resigns his commn. and retains his rank.

Maj. R. L. Fitz-Gerald, having attained the age limit, is retired and retains his rank with permission to wear the precribed uniform.

The undermentioned relinquish their commns. and retain their rank, except where otherwise stated: Capts. A. Cameron, K. F. R. Davison, A. C. Tibbits, and R. R. Powell (granted the rank of Maj.), F. Chadwick, R. Willan, J. A. Bell, D. T. Lewis, C. J. E. Bennett, and J. M. Pringle.

TERRITORIAL ARMY RESERVE.

Capt. A. C. H. McCullagh, from Genl. List, to be Lt.-Col.

Maj. C. E. K. Herapath and Capt. E. V. Connellan, from Genl. List, to be Majs.

Capt. R. P. Anderson, from Genl. List, to be Capt.

The undermentioned, having attained the age limit, are retired and retain their rank, except where otherwise stated: Lt.-Col. W. S. Sharpe (with permission to wear the prescribed uniform); Maj. J. C. S. Burkitt (granted the rank of Lt.-Col.); Majs. R. Starkey-Smith (with permission to wear the prescribed uniform) and B. W. Hogarth; Capts. H. C. Phillips, R. S. Young, and P. T. Jones.

Capt. R. H. Hardwick relinquishes his commn. and retains the rank of Capt.

ROYAL AIR FORCE.

J. G. Russell is granted a short-service commission as a Flying Officer.

Flying Officer J. Prendergast to be Flight Lt.

DEATHS IN THE SERVICES.

Surg.-Gen. Sir Francis Wollaston Trevor, K.C.S.I., C.B., who died at his residence, Oerley Hall, Shropshire, on Nov. 16th at the age of 70, received his first commission in the army in September, 1874. Sir Francis Trevor had served in the Afghanistan, Sudan, and South African campaigns, and was chief medical officer of the forces in India in 1908. An honorary surgeon to the King, he retired from the Service in 1912.

Surg. Lt.-Col. George Gilbert Maclaren, I.M.S., retd., founder of the leper hospital at Dehra Dun, died on Nov. 7th, aged 76, at Blairgowrie. He was appointed assistant surgeon on the Bengal Staff in 1868.

MEDICAL CANDIDATES FOR PARLIAMENT:

SUCCESSFUL AND UNSUCCESSFUL.

THE complete list of medical men entitled to sit in the House of Commons is as follows:—

Member.	*Constituency.*	*Party.*
Sir George Berry	Scottish Universities	Conservative.
Dr. W. A. Chapple	Dumfries	Liberal.
Sir John Collie	Glasgow, Partick	National Lib.
Capt. W. E. Elliot	Lanark, Lanark	Conservative.
Dr. F. E. Fremantle	Hertford, St. Albans	Conservative.
Dr. L. G. S. Molloy	Blackpool	Conservative.
Dr. J. E. Molson	Lincoln, Gainsborough	Conservative.
Sir Sydney Russell-Wells	London University	Conservative.
Dr. Alfred Salter	Bermondsey, West	Labour.
Dr. Thomas Watts	Manchester, Withington	Conservative.
Sir William Whitla	Queen's University, Belfast	Conservative.
Dr. J. H. Williams	Carmarthen, Llanelly	Labour.

Successful and Unsuccessful Candidates.

A list of medical candidates for Parliament is here given, showing the individual position at the poll, and the number of votes registered. An asterisk indicates membership of the last House of Commons, while a dagger indicates that the candidate contested this or some other seat at the last general election. C., Conservative; L., Liberal; N.L., National Liberal; I.L., Independent Liberal; Lab., Labour; Ind., Independent; U., unopposed.

List of Medical Candidates for Parliament.

Constituency.	Name.	Position at poll.	Votes registered.
Universities:			
London	Sir S. Russell-Wells	1	(1) C., 3833; (2) L., 2180; (3) Lab., 1427.
Combined English	Dr. S. C. Lawrence	6	(1) C., 1093; (2) N.L., 1009 (2 members); (3) Ind., 813; (4) Lab. 366; (5)C., 206; (6) Ind.C., 90.
Scottish	Sir George Berry	U.	—
Queen's, Belfast	Sir Wm. Whitla*	U.	—
London Boroughs:			
Bermondsey, West	Dr. Alfred Salter†	1	(1) Lab., 7550; (2) L., 5225; (3) N.L., 2184; (4) C., 1328.
Camberwell, North-West	Dr. H. B. Morgan	2	(1) N.L., 8339; (2) Lab., 5182; (3) L., 3270.
Hackney, Central	Col. A. Lynch†	3	(1) N.L., 9795; (2) L., 6825; (3) Lab. 4507.
Islington, East	Dr. Ethel Bentham	3	(1) C., 11954; (2) L., 8107; (3) Lab. 5900.
Kensington, North	Dr. C. W. Hayward	3	(1) C., 12328; (2) Lab. 6225; (3) L., 4666.
Shoreditch	Rt. Hon. C. Addison*	3	(1) N.L., 9084; (2) Lab., 8834; (3) L., 6273.
Southwark, North	Dr. L. Haden Guest†	2	(1) N.L., 7435; (2) Lab. 6323.
English Boroughs:			
Birmingham Ladywood	Dr. R. Dunstan†	2	(1) C., 13032; (2) Lab., 10589.
Blackpool	Dr. L. G. S. Molloy	1	(1) C., 18206; (2) L., 18040.
Leicester, West	Dr. E. G. Spero	3	(1) Lab., 12929; (2) N.L., 8137; (3) L., 7631.
Manchester, Withington	Dr. Thos. Watts	1	(1) C., 11678; (2) L., 11008.
Middlesbro', West	Dr. H. D. Levick	2	(1) L., 16811; (2) N.L., 7422.
Newcastle-on-Tyne, North	Dr. R. W. Simpson	2	(1) C., 14931; (2) L., 8017; (3) Ind. Lab., 1435.
Plymouth Sutton	Dr. H. Wansey Bayly	3	(1) C., 13924; (2) Lab., 10831; (3) Ind. C., 4643.
Salford, West	Sir Wm. Milligan	3	(1) C., 12130; (2) Lab., 8724; (3) L., 6174.
Southampton	Dr. E. H. Stancomb	4	(1) C., 22054; (2) C., 20351 (2 members); (3) Lab., 14868; (4) Ind., 14193; (5) N.L., 11576; (6) N.L., 9318.
Sunderland	Dr. V. H. Rutherford†	5	(1) C., 28001; (2) C., 24595 (2 members); (3) N.L., 19058; (4) Lab., 13683; (5) Lab., 13490; (6) L., 13036.
Walthamstow, East	Dr. H. B. Brackenbury	3	(1) C., 9178; (2) Lab., 6382; (3) L., 4043.
Wimbledon	Dr. R. O. Moon	2	(1) C., 16751; (2) L., 6627.
English Counties:			
Durham, Chester-le-Street	Dr. D. F. Todd	2	(1) Lab., 20296; (2) C., 9335.
Essex, Saffron Walden	Dr. R. McNair Wilson	4	(1) C., 9844; (2) Lab., 6797; (3) N.L., 3087; (4) L., 2853.
Hertford, St. Albans	Dr. F. E. Fremantle*	1	(1) C., 14594; (2) Lab., 10662.
Lancaster, Newton	Dr. H. B. Bates	2	(1) Lab., 12312; (2) C., 8214; (3) Ind., 1618.
Lincoln, Gainsboro'	Dr. J. E. Molson*	1	(1) C., 9015; (2) L., 7216; (3) Lab., 4884.
Surrey, Epsom	Mr. Somerville Hastings	2	(1) C., 16249; (2) Lab., 6571.
Wales:			
Carmarthen, Llanelly	Dr. J. H. Williams†	1	(1) Lab., 23213; (2) N.L., 15947.
Scottish Burghs:			
Glasgow, Partick	Sir John Collie	1	(1) N.L., 11754; (2) L., 6282.
Scottish Counties:			
Dumfries	Dr. W. A. Chapple	1	(1) L., 13296; (2) C., 11055.
Inverness, W. Isles	Dr. D. Murray	2	(1) N.L., 6177; (2) L., 5238.
Lanark, Lanark	Capt. W. E. Elliot*	1	(1) C., 12005; (2) Lab., 9812.

The Federation of Medical and Allied Services (12, Stratford-place, London, W. 1) gave support to 15 medical candidates, 9 of whom have been returned to Parliament, and to 8 Lay Fellows of the Federation, 7 of whom have been returned, as follows :—

Sir Henry Craik (C.)	Scottish Universities.
Viscount Elveden (C.)	Southend-on-Sea.
Viscount Curzon (C.)	Battersea, South.
Comdr. O. Locker-Lampson (C.)	Handsworth, Birmingham.
Capt. T. Cato Worsfold, D.Sc. (C.)	Mitcham, Surrey.
Mr. Harold Morris, K.C. (N.L.)	Bristol, East.
Major Herbert R. Cayzer (C.) ..	Portsmouth, South.

Medical News.

UNIVERSITY OF LONDON.—At a meeting of the Senate held on Nov. 15th, Mr. H. J. Waring, the Vice-Chancellor, being in the chair, the William Julius Mickle Fellowship of £200 was awarded to Mr. F. J. F. Barrington, M.B., M.S., in respect of the work which he has carried out during the past five years on the Nervous Mechanism of Micturition.

A public lecture entitled the Pasteurisation of the Public Milk-supply, will be delivered at University College, Gower-street, W.C., by Prof. Henry Kenwood, on Nov. 23rd, at 5 P.M. The chair will be taken by Sir William Collins.

At examinations held recently the following candidates were successful :—

THIRD (M.B., B.S.) EXAMINATION FOR MEDICAL DEGREES.

Honours.—George L. Brocklehurst (*d*), St. Bart.'s Hosp.; Graham W. Heckels (*d*), Guy's Hosp.; Robert Hunt Cooke (*a*), St. Bart.'s Hosp.; Sybil G. Mocatta (*e*), and Thomas S. North (*e*), St. Mary's Hosp.; Winifred A. M. Thompson (*a*), London Sch. of Med. for Women; Richard H. Wade (*a*, *d*), St. Bart.'s Hosp.; Agnes H. White (*c*), London Sch. of Med. for Women; and Samson Wright (*a*, *d*, *e*, University Medal), Middlesex Hosp.

(*a*) Distinguished in Medicine. (*d*) Distinguished in Surgery.
(*c*) Distinguished in Forensic Medicine.
(*e*) Distinguished in Midwifery.

Pass.—Norman D. Ball and Joyce R. Batten, Univ. Coll. Hosp.; Edward V. Beaumont, St. Mary's Hosp.; John A. Binning, Univ. Coll. Hosp.; Mary H. Y. Blakeston and Rosalind Bradley, London Sch. of Med. for Women; Reginald B. Britton, Bristol Univ.; Lorna P. Brown, Univ. Coll. Hosp.; Eric A. Coldrey, St. Bart.'s Hosp.; Nancy M. Coutts, London Sch. of Med. for Women; Idris Davies, Univ. Coll., Cardiff, and Westminster Hosp.; Alexander D. d'Avray and Mary Catherine Elliott, Univ. Coll. Hosp.; Israel Feldman, London Hosp.; Marie L. P. Goetze and Marjorie Pearl Christine Greene, London Sch. of Med. for Women; Gertrude E. Harre, St. Mary's Hosp.; Hilda M. Haythornthwaite and Margaret Haywood, London Sch. of Med. for Women; John P. Hosford, St. Bart.'s Hosp.; David M. Jones, Univ. Coll., Cardiff, and London Hosp.; Dilys Menai Jones, Univ. Coll. Hosp.; William A. Low, St. Thomas's Hosp.; Dora Mason, London Sch. of Med. for Women and St. Mary's Hosp.; Ralph G. Michelmore, London Hosp.; Olga M. Naylor, London Sch. of Med. for Women; Bertram S. Nissé, London Hosp.; Rupert J. Parry, Univ. Coll. Hosp.; Frederick A. Pickworth and Gladys H. Randall, Charing Cross Hosp.; Sydney D. Rhind, St. George's Hosp.; Philip L. Richardson, Guy's Hosp.; William G. Rose and Joan Margaret Rees, St. Mary's Hosp.; Charles H. St. John, Guy's Hosp.; Gladys M. Sandes, London Sch. of Med. for Women; Frederick H. Scotson, Victoria Univ. of Manchester; Olive B. Sharp, St. Mary's Hosp.; Bertram L. Slater and William A. M. Smart, London Hosp.; Dulcie C. Staveley, London Sch. of Med. for Women; Eleanor C. E. Stone, St. Mary's Hosp.; Aubrey J. C. Tingey, St. Thomas's Hosp.; Frederick H. W. Tozer, London Hosp.; and Lendal Tweed and Harriette B. Woodhouse, London Sch. of Med. for Women.

The following candidates have passed in one of the two groups of subjects :—

Group I.—Edith I. L. Abbott, Univ. Coll. Hosp.; Khorshed Sorabji Captain, Grant Med. Coll., Bombay, and London Sch. of Med. for Women; Grace D. Chambers, St. Mary's Hosp.; Eva D. Cook, London Sch. of Med. for Women; Saul Crown and Guy W. Elkington, Guy's Hosp.; Richard F. Fagan, Univ. Coll. Hosp.; Ellis C. Heap, St. Thomas's Hosp.; Louis J. M. Laurent, Univ. Coll. Hosp.; Ernest A. Leviseur, Guy's Hosp.; Alan C. Maconie, St. Bart.'s Hosp.; Norman S. Macpherson, St. Thomas's Hosp.; Ena M. Sansom, London Sch. of Med. for Women; and Richard O. Swaine, Middlesex Hosp.

Group II.—Douglas A. Blount, St. Bart.'s Hosp.; Gladys L. Buckley, London Sch. of Med. for Women; Helen W. Duncan, Liverpool Univ.; Christine P. Francis, King's Coll. Hosp.; Frank A. Gaydon, St. Thomas's Hosp.; Alice M. F. Goldmann, Univ. Coll. Hosp.; Kathleen M. D. Harding, London Sch. of Med. for Women and St. Mary's Hosp.; Marjorie C. Hawkins, Westminster Hosp.; Edgar G. Housden, St. Thomas's Hosp.; Gilbert H. Howells, Univ. Coll., Cardiff, and St. Thomas's Hosp.; Arthur E. Jenkins, St. Thomas's Hosp.; Basil L. Laver and Felix R. Leblanc, Guy's Hosp.; Mary Michael and Muriel Rawlinson, London Sch. of Med. for Women; Olive M. Salmon, St. Mary's Hosp.; Arthur H. Shelswell, Guy's Hosp.; Abraham I. Silverman, Middlesex Hosp.; Emma M. Store, London Sch. of Med. for Women; Harold G. Stormer, St. Thomas's Hosp.; and Ralph S. Swindell, London Hosp.

UNIVERSITY OF LEEDS.—At a Council meeting held on Nov. 20th the following appointments were made: Dr. A. H. Priestley, lecturer in bacteriology; Mr. J. K. Crawford, L.D.S., hon. demonstrator in dental histology. The Council approved the institution of the following three new lectureships in the School of Medicine: Mr. S. W. Daw, orthopædic surgery; Dr. R. A. Veale on diseases of the skin; Dr. C. W. Vining on diseases of children.

THE LATE DR. F. Y. TOMS, R.N.—On Nov. 13th, at the age of 96, Francis Yeates Toms, who took the L.S.A. diploma and became M.R.C.S.Eng. in 1848, died at Hove. He was appointed surgeon in the Royal Navy in 1849, was promoted staff-surgeon in 1857, and fleet-surgeon in 1872, retiring in 1881 with the honorary rank of Deputy Inspector-General of Hospitals and Fleets after 33 years' service in the Navy. He was a popular figure in Hove till his great age led to his withdrawal from municipal and social activities, and served for some time as a member of the Hove Town Council and the Steyning Board of Guardians.

PRINCE OF WALES'S HOSPITAL AND NORTH-EAST LONDON POST-GRADUATE COLLEGE.—The annual dinner of the Reunion Association was held at Pagani's Restaurant, London, W., on Nov. 9th. Dr. F. G. Crookshank, who presided over a representative gathering, said that the executive committee had deferred bringing forward a definite constitution on this occasion, but he hoped that it would be possible at the next annual gathering to consider plans for the future in relation with the College and N.-E. London Clinical Society. The membership to date consisted of 43 life members, 12 annual subscribers, and 4 overseas members. This was an encouraging beginning, but the success of the Association lay in the hands of members themselves. Applications for membership from former members of the hospital staffs and from students of the Post-Graduate College would be received by the hon. secs., Dr. Jenkins Oliver, 1, Devonshire-place, W. 1, and Mr. S. O. Rashbrook, 1, Priory-terrace, Kew, Surrey.

COLSTON RESEARCH SOCIETY.—The object of this society is the promotion of research within the University of Bristol. In the annual report recently issued it is recorded that one of the research scholarships endowed by the principal industrial firms of the city falls to the Faculty of Medicine. A number of the researches alluded to in the report emanate from various medical departments. Prof. E. Fawcett and Prof. F. H. Edgeworth report investigations into different aspects of the development of the head and neck. In the department of physiology, Prof. G. A. Buckmaster reports further work on the relation between hæmoglobin and carbon dioxide, and also efforts to evolve a simpler electro-cardiographic apparatus. Prof. I. Walker Hall has continued his researches into the action of dilute acids on bacterial growth. Dr. C. F. Coombs and Dr. C. E. K. Herapath give an account of further work on various cardiological problems.

FELLOWSHIP OF MEDICINE.—At a meeting of the Executive Committee of the Fellowship of Medicine, held on Nov. 14th at 1, Wimpole-street, London, W., under the Presidency of Sir Humphry Rolleston, the following sub-committees were elected :—Finance Sub-Committee: The honorary officers of the Association; Dr. Charles Buttar, Dr. E. Farquhar Buzzard, Dr. A. M. H. Gray, Mr. A. E. Webb-Johnson, and Dr. A. J. Whiting. The Education Sub-Committee: The honorary officers of the Association; Dr. Aldo Castellani, Mr. Zachary Cope, Sir William Hale-White, Dr. C. O. Hawthorne, and Dr. C. M. Wilson. The Social Sub-Committee: The honorary officers of the Association; Dr. C. B. Heald, Sir William Hale-White, Mr. W. Ernest Miles, Sir Squire Sprigge, and Sir StClair Thomson. General Purposes Sub-Committee: The honorary officers of the Association; Dr. Charles Buttar, Sir William Hale-White, Dr. C. O. Hawthorne, Mr. H. J. Waring, and Dr. A. J. Whiting. It was decided that the General Purposes Committee with four added members, Miss L. B. Aldrich-Blake, Dr. Aldo Castellani, Prof. F. R. Fraser, and Sir Dawson Williams, should be instructed to draw up a definite scheme with regard to the future policy of the Post-Graduate Medical Association, having particular regard to the possibility of establishing a Post-Graduate Medical School in London. The opinion was expressed that a big central scheme could never be carried out without a hospital devoted to post-graduate teaching, and that it should be the business of the Fellowship to influence public opinion, and thus induce one of the existing medical schools to consider such a proposition.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.—The resumed annual conversazione took place on Tuesday, Nov. 21st, when the President, Sir Humphry Rolleston, received Fellows and Members of the College and their friends. Incunabula of great interest were on view in the large library as well as many other treasures of the College, including the silver caduceus made for Dr. John Caius (1556), the gold-headed cane used by Dr. Radcliffe, and Harvey's demonstrating rod. There was a remarkable exhibition of nature films in the small theatre by the Regent Film Co., and a select programme of music. The attendance was large.

DENTAL BOARD OF THE UNITED KINGDOM.—The third session of the Dental Board was opened on Nov. 21st at 44, Hallam-street, London, W., the Rt. Hon. F. D. Acland being in the chair. In his address, Mr. Acland stated that as the result of a recommendation from the Board, His Majesty in Council had deferred the putting into operation of Section 1 of the Dentists Act until the 30th of this month. After that date any person, other than persons whose names have been entered on the Medical or Dentists' Registers, who "practises or holds himself out, whether directly or by implication, as practising or as being prepared to practise dentistry" will render himself liable on summary conviction to a fine not exceeding £100 for or in respect of each offence. This applies to all unregistered persons, whether their names are entered for the prescribed examination or not. Mr. Acland went on to say that some who have obtained registration under the new Act are still in doubt as to the titles they may use. The Act lays down clearly that persons who do not possess a licence or qualification may only use the description of "dentist" or "dental practitioner," and must not use any misleading title in connexion with their premises. The use of the words "dental surgery," therefore, seems entirely prohibited for persons within this category. A registered medical practitioner whose name is not on the Dentists' Register may call himself a "dental surgeon," but may not call himself "surgeon dentist." The number of persons registered under the new Act amounts to a little under 7000, and it is estimated that the figure will be about 8000 by the end of the year. Three or four years must elapse before the Board has sufficient evidence for a reliable forecast of future income; but among the objects upon which such income may be expended are: (1) the giving of facilities for a larger number of students to enter the profession; (2) provision of better accommodation and teaching in the schools; (3) assistance to persons who have obtained registration without the licentiateship of dental surgery to obtain the licentiateship or a degree; (4) provision of facilities for post-graduate study and research. One of the main problems which will be before the Board for some years is that of students; the practising list to be aimed at is one containing 16,000 names, on the basis of 1 to every 3000 of the population.

DEATH OF DR. MYER AKIBA DUTCH.—The sudden death of Myer Akiba Dutch occurred at Brighton on Nov. 10th, from a third attack of cerebral hæmorrhage, at the age of 59. He was born in Dublin, educated at the Wesleyan and Erasmus Smith High School, and commenced his medical studies at the Royal College of Surgeons Medical School. He was a successful student of his year, taking scholarships and prizes in both medicine and surgery. He then studied in Vienna and after qualification spent a short time as ship surgeon. He practised for several years at Crewe, but later coming to London, established himself in Walm-lane, Cricklewood, where he gained an extensive general practice. In 1904 he took the M.D. Durh., proceeding also to the F.R.C.S. Edin. in 1908. He was a D.P.H. Cambridge. For some time during the war he was physician to the Bermondsey Military Hospital, and later he took up the duties of officer in command at Tudor House and Beech House Military Hospitals, Brondesbury, his services, which entailed upon him considerable strain, being specially commended. Dr. Dutch was well known in Masonic circles, and Past-Master of St. George Lodge, which he founded. He made many friends and wrote usefully upon digestive ailments. He leaves a widow, two sons, and one daughter.

MEDICAL OFFICERS ON COUNTY HEALTH BOARDS.—The Local Government Department of Dail Earann has taken an unexpected step in issuing a mandate to the Wexford County Health Board that medical officers are ineligible for seats on such boards. When county boards were first established a couple of years ago on the recommendation of the Local Government Department it was part of the scheme that the members of the medical profession in each county should be asked to appoint certain of their members to seats on the board. No condition was imposed that medical men who held public office in the county should be ineligible. As a matter of fact, in every county in which a health scheme was adopted medical officers became members of the board, and, so far as we know, their right to do so was not previously questioned. There is reason to believe that their advice and help have been valued by their lay colleagues. In Co. Wexford a medical officer, Dr. G. E. J. Greene, elected to the board not by his medical colleagues but by the Insurance Committee, of which he is chairman, has so impressed the other members as to have been appointed chairman. The Local Government Department has now declared that being a medical officer in the county he cannot be a member of the board. This decision, if persisted in, invalidates the position not only of Dr. Greene, but of some dozens of medical members throughout the several counties.

THE LATE DR. E. H. EASTWOOD.—We regret to record the death on Nov. 13th, at Formby, Lancashire, of Eric Hastings Eastwood, M.B., Ch.B. Liverp., at the early age of 30 years. Dr. Eastwood entered Liverpool University from Merchant Taylors' School, Crosby, with a Robert Gee Entrance Scholarship. During his academic career he gained the following distinctions: Senior Lyon Jones Scholarship, University Exhibition in Anatomy and Physiology, Torr Gold Medal for Anatomy, and Holt Medal for Physiology. In March, 1916, he qualified M.B., Ch.B. with honours, and distinction in obstetrics and gynæcology. During the war he held in succession the appointments of bacteriologist to the Deccan British War Hospital, Poona, bacteriologist to the North Russian Expeditionary Force (Murmansk), and bacteriologist to the Royal Victoria Hospital, Netley. After demobilisation he was appointed pathologist to the Royal Southern Hospital, Liverpool, a post which he held for 18 months, when he was elected demonstrator of pathology in the University of Sheffield. Only three weeks before his death he was appointed lecturer on pathology in Prof. Ernest Glynn's laboratory at the University of Liverpool. All those with whom Dr. Eastwood worked unite in paying tribute to his ability, his enthusiasm, and his loyal coöperation. The loss of one whose short life was so full of promise is to be deeply mourned.

ROYAL SANITARY INSTITUTE.—The next Congress will be held at Hull from July 30th to August 4th, 1923.

THE LATE LIEUT.-COL. G. N. BIGGS, R.A.M.C.(T.).—Colonel George Nixon Biggs, who died on Nov. 10th, was a graduate of Durham University, having qualified with the M.B., B.S. degree in 1905. The son of Dr. M. G. Biggs, he was born in 1881 and received his preliminary education at Westminster School. In London he was a St. Thomas's Hospital student, and, after qualifying, held various appointments in connexion with the treatment of diseases of the ear, nose, and throat. He had been aural surgeon at the Evelina Hospital, where at the time of his death he was a consulting surgeon, and among his other appointments were those of surgeon in charge of the ear and throat departments at the Royal Waterloo Hospital for Women and Children, the Dreadnought Hospital at Greenwich, and the Hospital for Paralysis and Epilepsy, Maida Vale. He was also teacher of otology, rhinology, and laryngology at the London School of Clinical Medicine, and during the war was consulting aurist and laryngologist at the Boulogne Base and to the R.A.F. He was mentioned in despatches and received the Portuguese Military Order of Avis. To the columns of THE LANCET he contributed articles on foreign bodies in the œsophagus and on other subjects connected with the branch of surgery in which he was particularly interested.

ROYAL MEDICAL BENEVOLENT FUND.—At a recent meeting of the Committee of the Fund 51 cases were considered and £627 1s. voted to 39 applicants. The following is a summary of some of the cases relieved:—

Daughter, aged 20, of M.B. Durh., M.R.C.S. Lond. who was a staff-surgeon in the Royal Navy and died in 1906. Applicant has only £14 per annum naval pension until she is 21. She has also a scholarship of £12 from the Royal Naval College. She is asking the Fund to help her with fees for King's College. Her brother-in-law has promised her £1 a week towards expenses. Voted £10.

Daughter, aged 49, of M.D. Aberd. who practised in Blackheath and died in 1915. Owing to ill-health she is unable to work, and has been living upon her capital and now has only £200 left. Her relations are only able to give very little, and last year the amount was £20. Board and lodging is 30s. a week. Voted £26 in 12 instalments.

Widow, aged 52, of L.R.C.P. & S. Edin. and Glasg. who practised as a ship's surgeon. As applicant's late husband's salary was insufficient she had to work to meet expenses and during the last 12 months the amount earned was £45. Her husband died in July this year, and the amount of his salary allotted was £13 10s. Rent for three rooms £14 5s. Help is asked towards the education of her two daughters. School fees owing amount to £14 11s. and Cambridge examination fee. Voted £26 in six instalments.

Widow, aged 57, of M.R.C.S., L.R.C.P. Lond. who practised in Streatham and died in August, 1922. When the estate is settled it is expected that income will only amount to £65 per annum, and she asks for assistance towards the expenses of her son, aged 14, who is at Dulwich College. A cousin is paying the

fees only. Rent from August 14th, £7 for five rooms. Applicant has a sister living with her and she pays £1 for board and lodging. Voted £18 in 12 instalments.

M.B., Ch.B. Aberd., aged 37, who practised in S.E. London. Has pulmonary tuberculosis and unable to work since March, 1921. Been in Mundesley Sanatorium 14 months. Disability pension £10 a month, and after deducting 12s. a week is able to pay wife £7 10s. a month for herself and daughter, aged 4. Sanatorium allowance £6 6s. and Lady Dudley's Fund £1 11s. 6d. This allowance pays fees at sanatorium except laundry and surgical dressings. Voted £20.

Subscriptions may be sent to the honorary treasurer, Sir Charters Symonds, K.B.E., C.B., F.R.C.S., at 11, Chandos-street, Cavendish-square, London, W. 1.

Medical Diary.

Information to be included in this column should reach us in proper form on Tuesday, and cannot appear if it reaches us later than the first post on Wednesday morning.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

MEETINGS OF SECTIONS.

Monday, Nov. 27th.

ODONTOLOGY: at 8 P.M.
Paper:
Dr. Watson-Williams: Infections of the Teeth and Gums in Relation to the Ear, Nose, and Throat.

LARYNGOLOGY AND OTOLOGY:
Members of these Sections are specially invited to attend and to take part in the discussion.
An abstract of the paper may be obtained on application to the Secretary, 1, Wimpole-street.

Tuesday, Nov. 28th.

MEDICINE AND OPHTHALMOLOGY: at 5.30 P.M.
Joint Discussion:
On the Significance of the Vascular and Other Changes in the Retina in Arterio-Sclerosis and Renal Disease.
To be opened by Dr. Batty Shaw (Medicine), and Mr. Foster Moore (Ophthalmology).
Dr. J. F. Gaskell, Dr. Arthur Ellis, Dr. C. O. Hawthorne, Mr. P. Adams, and Mr. Percy Bardsley have promised to contribute to the discussion.
A limited number of slip proofs of the opening papers are available on application to the Secretary of the Royal Society of Medicine by those who wish to take part.

Wednesday, Nov. 29th, and Thursday, Nov. 30th.

BALNEOLOGY AND CLIMATOLOGY:
WEDNESDAY, Nov. 29th, at 5.30 P.M., at the Royal Society of Medicine.
Exhibition of the "Aerologia" of Domenico Panarolo published at Rome in 1642: by Dr. Septimus Sunderland (for Dr. Guy Hinsdale).
Discussion on "Blood Pressure."
To be opened by Dr. J. Campbell McClure.
Those intending to take part are requested to inform Dr. C. F. Sonntag (Hon. Secretary) before Tuesday, Nov. 28th.
Members of the Section will dine together at the Welbeck Palace Hotel, Welbeck-street, at 7 P.M. Those intending to be present are requested to inform Dr. Sonntag not later than by the last post on Nov. 28th.
THURSDAY, Nov. 30th, at 10.30 A.M., at the Zoological Gardens.
Members will gather at the South Gate of the Gardens in the Broad Walk, Regent's Park, at 10.30 A.M. Dr. Sonntag has some admission cards. Those for whom no cards are available will be required to pay for admission to the Gardens.
Members will be shown the working of the Prosectorium.

Thursday, Nov. 30th.

OCCASIONAL LECTURE: at 5 P.M.
Sir Almroth Wright: New Principle in Therapeutic Immunisation.
The chair will be taken by the President, Sir William Hale-White.

UROLOGY: at 2.30 P.M.
Operations at the London Hospital by Mr. Hugh Lett.
At 8.30 P.M., at 1, Wimpole-street, W. 1.
Paper:
Dr. Langdon Brown: Some Factors in Uræmia.
It is hoped that a full discussion will follow.

Friday, Dec. 1st.

LARYNGOLOGY: at 4.45 P.M. (Cases at 4 P.M.)
Cases and Specimens will be shown by Dr. J. Atkinson, Dr. C. P. Symonds, Mr. Herbert Tilley, Dr. Kelson, Dr. Andrew Wylie, Mr. W. M. Mollison, Mr. G. W. Dawson, and Sir James Dundas-Grant.
Lantern Demonstration by:—
Dr. Logan Turner: An Unusual Tonsillar Appendage and its Relation to Cartilage Formation in the Tonsil.

ANÆSTHETICS: at 8.30 P.M.
Short notes on Administrations of special interest.
Each communication will be followed by a brief discussion.
Members who are willing to contribute notes should communicate with the Junior Hon. Secretary if they have not already done so.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W. 1.
MONDAY, Nov. 27th.—8.30 P.M., Blood Transfusion in Civil Practice. Discussion to be introduced by Mr. Geoffrey Keynes, to be followed by Mr. Gordon Taylor, Sir Thomas Horder, Mr. Kenneth Walker, Mr. Eardley Holland, and others.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

FELLOWSHIP OF MEDICINE POST-GRADUATE LECTURES, 1, Wimpole-street, W.
MONDAY, Nov. 27th.—5 P.M., Dr. J. D. Mortimer: The Medico-Legal Position of the Anæsthetist.

WEST LONDON POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.
MONDAY, Nov. 27th.—10.30 A.M., Mr. Maingot: Surgical Pathology. 12.15 P.M., Dr. Burnford: Pathological Demonstration. 4.30 P.M., Dr. Saunders: Rheumatism in Children and its Treatment.
TUESDAY.—10 A.M., Dr. Paterson: Demonstration of Medical Cases. 12 noon, Mr. Sinclair: Surgical Diseases of Abdomen. 4.30 P.M., Dr. Pritchard: On Intravenous and Intramuscular Forms of Treatment.
WEDNESDAY.—10 A.M., Dr. Saunders: Medical Diseases of Children. 12 noon, Mr. Simmonds: Demonstration of Fractures. 4.30 P.M., Dr. Pernet: Affections of the Genitalia, Syphilitic and Otherwise.
THURSDAY.—10 A.M., Dr. Grainger Stewart: Neurological Department. 12 noon, Dr. Scott Pinchin: Disease of the Heart. 4.30 P.M., Sir StClair Thomson: Sinusitis and its Treatment in General Practice.
FRIDAY, Dec. 1st.—11 A.M., Dr. McDougal: Electrical Department. 12.15 P.M., Dr. Burnford: Applied Pathology. 4.30 P.M., Mr. Steadman: Pathology and Morbid Anatomy of Periodontal Disease.
SATURDAY.—9 A.M., Dr. Burnford: Bacterial Therapy. 10 A.M., Dr. Saunders: Medical Diseases of Children. 10 A.M., Mr. Simmonds: Orthopædics.
Daily, 10 A.M. to 6 P.M., Saturdays, 10 A.M. to 1 P.M.: In-patients, Out-patients, Operations, Special Departments.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.
MONDAY, Nov. 27th.—10 A.M., Mr. W. E. Tanner: Surgical Out-patient Clinic. Mr. N. Fleming: Eye Cases and Operations. 3.30 P.M., Dr. A. J. Whiting: Cardiac Irregularities.
TUESDAY.—3 P.M., Mr. J. Howell Evans: Surgical In-patients. 4.30 P.M., Mr. C. H. Hayton: Middle-Ear Deafness. 5.30 P.M., Dr. C. E. Sundell: Children In-patients.
WEDNESDAY.—2 P.M., Mr. C. H. Hayton: Throat Operations.
THURSDAY.—2 P.M., Mr. J. Bright Banister: Gynæcological Operations. 3.30 P.M., Dr. J. Metcalfe: The Radiography of the Heart and Aorta.
FRIDAY.—12 noon, Mr. T. H. C. Benians: Pathological Demonstration.
SATURDAY.—10 A.M.: Surgical Operations. 3 P.M., Surgical In-patients.
Daily, 2.30 P.M.: Operations, In- and Out-patient Clinics in General and Special Departments, &c.

SOUTH-WEST LONDON POST-GRADUATE ASSOCIATION, St. James' Hospital, Ouseley-road, Balham.
WEDNESDAY, Nov. 29th.—4 P.M., Dr. Stanley Wyard: The Value of Blood.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C. 1.
POST-GRADUATE COURSE: OCT.–DEC., 1922.
CLINICAL LECTURES AND DEMONSTRATIONS.
MONDAY, Nov. 27th.—2 P.M., Out-patient Clinic: Dr. Hinds Howell. 3.30 P.M., Demonstration of Physical Exercises.
TUESDAY, Nov. 28th.—2 P.M., Out-patient Clinic: Dr. Grainger Stewart. 3.30 P.M., Lecture:—Muscular Atrophy: Dr. Adie.
THURSDAY, Nov. 30th.—2 P.M., Out-patient Clinic: Dr. Kinnier Wilson. 3.30 P.M., Lecture:—Electrical Testing of Muscles: Dr. Bailey.
FRIDAY, Dec. 1st.—2 P.M., Out-patient Clinic: Dr. Gordon Holmes. 3.30 P.M., Lecture:—Cerebral Tumours from the Surgical Aspect: Mr. Sargent.
Mr. Armour and Mr. Sargent operate at the Hospital on Tuesday and Friday mornings at 9 A.M., or at such other times as may be announced.
Lectures on NEURO-OPHTHALMOLOGY (in the Lecture Theatre). WEDNESDAY, Nov. 29th.—3.30 P.M., Visual Fields. WEDNESDAY, Dec. 6th.—3.30 P.M., Pupillary Abnormalities: Mr. Leslie Paton.
N.B.—Not more than fourteen candidates can attend this Course.
Fees should be paid to the Secretary of the Hospital at the office on entering for the Course.
C. M. HINDS HOWELL, Dean of Medical School.

THE NATIONAL HOSPITAL FOR DISEASES OF THE HEART, Westmoreland-street, W.
MONDAY, Nov. 27th.—10 A.M., Dr. J. Strickland Goodall: Out-patients. 5.30 P.M., Dr. F. W. Price: Cardiac Arrhythmias.
TUESDAY.—10 A.M., Dr. B. T. Parsons-Smith: Out-patients. 2 P.M., Sir Sydney Russell-Wells: Out-patients.
WEDNESDAY.—10 A.M., Dr. John Parkinson: Out-patients. 2 P.M., Dr. R. O. Moon: Out-patients.
THURSDAY.—2 P.M., Dr. F. W. Price: Out-patients, and Dr. R. O. Moon: Ward Round.
FRIDAY, Dec. 1st.—10 A.M., Dr. B. T. Parsons-Smith: Out-patients. 2 P.M., Dr. John Parkinson: Out-patients. 4 P.M., Dr. J. Strickland Goodall: Aortic Regurgitation.
SATURDAY.—11 A.M., Dr. P. Hamill: Ward Round.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.
THURSDAY, Nov. 30th.—4 P.M., Mr. Addison: Demonstration of Surgical Cases.

ST. JOHN'S HOSPITAL, 49, Leicester-square, W.C.
THURSDAY, Nov. 30th.—5 P.M., Dr. W. K. Sibley: Electrical Treatment, Ionisation, &c.

MANCHESTER ROYAL INFIRMARY POST-GRADUATE CLINIC.
TUESDAY, Nov. 28th.—4.15 P.M., Mr. A. H. Burgess: Renal Tuberculosis.

MANCHESTER FRENCH HOSPITAL, 24, Acomb-street, Whitworth Park.
THURSDAY, Nov. 30th.—4.30 P.M., Dr. A. C. Magian: Methods of Cystoscopy.

UNIVERSITY OF SHEFFIELD—FACULTY OF MEDICINE
Post-Graduate Lectures and Demonstrations.
TUESDAY, Nov. 28th.—3 P.M. (at the Jessop Hospital) Mr. Chisholm: Demonstration of Cases.
FRIDAY, Dec. 1st.—3 P.M. (at the Royal Infirmary) Dr. Barnes: Demonstration of Cases. 4 P.M., Prof. Connell: Fractures.

ANCOATS HOSPITAL POST-GRADUATE LECTURES.
THURSDAY, Nov. 30th.—4.30 P.M., Dr. Sutherland Reid: On Syphilis of the Internal Organs.

ROYAL INSTITUTE OF PUBLIC HEALTH, 37, Russell-square, W.C.
WEDNESDAY, Nov. 29th.—4 P.M., Dr. J. Sim Wallace: School Dental Clinics.

Appointments.

FULLER, A. R., L.R.C.P. Lond., M.R.C.S. D.P.H., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Perranporth District of the County of Cornwall.
ODDY, H. M., M.B., B.Ch. Oxf., M.R.C.P. Lond., Physician to Out-patients, Hampstead General and North-West London Hospital.
QUINE, W. J. A., M.B., B.S. Lond., D.P.H., Port Medical Officer for Plymouth.

Vacancies.

For further information refer to the advertisement columns.

Ashton-under-Lyne District Infirmary.—H.S. £150.
Bangor, Carnarvonshire and Anglesey Infirmary.—H.S.
Bermondsey Medical Mission Hospital, 44, Grange-road, Bermondsey, S.E.—Res. M.O. £100.
Bradford, Municipal General Hospital, St. Luke's.—H.P. and H.S. Each £200.
Cairo School of Medicine, Egypt.—Radiologist &c. L.E.480.
Central London Throat, Nose, and Ear Hospital, Gray's Inn-road, W.C.—Res. H.S. £75.
Chester Royal Infirmary.—Hon. Asst. Ophth. Surg.
Croydon Borough Hospital for Infectious Diseases.—Asst. Res. M.O. £350.
Douglas, Isle of Man Mental Hospital.—Asst. M.O. £300.
Dreadnought Hospital, Greenwich, S.E.—H.S. £150.
Elizabeth Garrett Anderson Hospital, Euston-road, N.W.—H.P., Obstet. Asst., and Two H.S.'s. Each £50.
Hampstead General and North-West London Hospital, Haverstock Hill, N.W.—H.P. and H.S., also Cas. M.O. and Cas. S.O. Each £150.
Hospital for Epilepsy and Paralysis, Maida Vale, W.—S. for Ear, Nose and Throat Dept.
Hospital for Sick Children, Great Ormond-street, W.C.—H.S. £50.
Inverness Northern Infirmary.—H.S. £150.
King Edward VII. Sanatorium, Midhurst, Sussex.—Second Asst. M.O. £250.
London Lock Hospital, 91, Dean-street, W.—Clin. Assts.
London Lock Hospital, Dean-street, and Harrow-road.—Surg. Reg.
London Temperance Hospital, Hampstead-road, N.W.—Cas. O. £150.
Manchester, Ancoats Hospital.—Hon. Surg.
Nottingham Children's Hospital.—Res. H.P. £160.
Oldham Royal Infirmary.—H.S.'s. Each £200.
Prince of Wales's General Hospital, Tottenham, N.—Hon. Anæsth. £20.
Queen Mary's Hospital for the East End, Stratford, E.—H.P. £150.
Queen's Hospital for Children, Hackney-road, Bethnal Green, E.—Asst. P. £25.
Royal Free Hospital, Gray's Inn-road, W.C.—H.P., H.S.'s., &c., also H.S. (M.M.S.) and Obstet. Asst. Each £50. Gynæcological Reg. £250.
St. Mary's Hospital, Paddington, W.—Med. Reg. £200.
Sheffield, Jessop Hospital for Women.—Asst. H.S.'s. £100.
Southport General Infirmary.—Sen. H.S. and Jun. H.S. £250 and £175 respectively.
University College Hospital, Gower-street, W.C.—M.O. £300.
West London Hospital, Hammersmith-road, W.—H.P., H.S., Aural H.S., and Res. Cas. O. Each £100.
Westminster Hospital, Broad Sanctuary, S.W.—Asst. S.
Willesden, Park Royal Hospital.—Asst. M.O. £350.
York County Hospital.—H.P. £150.

The Chief Inspector of Factories, Home Office, London, S.W., announces the following vacant appointment: Brandon (Suffolk).

Births, Marriages, and Deaths.

BIRTHS.

KENNEDY.—On Nov. 12th, at Boughton, near Faversham, Kent, the wife of Arthur Kennedy, M.A., M.B., Ch.B., of a daughter.
SUTHERLAND.—On Nov. 18th, at St. Brenda's, Clifton, the wife of Halliday G. Sutherland, M.D., of twin sons.
WEBSTER.—On Nov. 13th, at Heath-mansions, Hampstead, the wife of J. H. Douglas Webster, M.D., M.R.C.P.E., of a daughter.

MARRIAGES.

HEATH—GEOGHEGAN.—On Nov. 14th, at the Parish Church, Chelsea, Thomas Lowthian Heath, M.R.C.S., L.R.C.P., to Olivia Maud, daughter of the late Alfred Vincent Geoghegan and of Mrs. Geoghegan.

DEATHS.

BIGGS.—On Nov. 10th, Lieut.-Colonel Biggs, T.D., of 31, Wimpole-street, aged 41.
SWEENY.—On Nov. 15th, suddenly, at Lypiatt-terrace, Cheltenham, Terence Humphrys Sweeny, C.M.G., Lieut.-Colonel I.M.S. (Retd.), aged 65.
VISE.—On Nov. 14th at Landsdowne-road, Tunbridge Wells, Christopher Vise, M.D., Major, R.A.M.C.(T.), T.D., Senior Physician of Tunbridge Wells General Hospital, aged 65.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.

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RATES FOR SMALL ADVERTISEMENTS.

Appointments (Public) Vacant, Asylums and Homes, Hotels, Boarding Houses, and Baths, Books and Publications, Houses and Estates Wanted and for Sale, Schools, Medical and Preparatory, Nursing Institutes	Four lines and under, 6s.
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POSITION PAGES.—Terms on application.

NEW SCHOOLS OF PATHOLOGY AND PHARMACOLOGY AT OXFORD.

THE offer of the trustees of the late Sir William Dunn to provide the sum of £100,000 for the establishment of a School of Pathology subject to certain conditions, referred to in THE LANCET last week, was submitted to Congregation on Nov. 21st, a week after the date originally fixed, in order to allow a fly-sheet of detailed information regarding the proposals to be circulated in the University. The preamble and decree were accepted without division by one of the largest Congregations held within recent years.

It was resolved :—

1. That the offer of Sir William Dunn's Trustees of £100,000 for the establishment of a new School of Pathology and of £3000 for the adaptation of the existing School of Pathology as the future School of Pharmacology, subject to the conditions laid down by the trustees, be gratefully accepted and that the Curators of the University Chest be authorised to receive the aforesaid sums and to expend them on the above-named purposes.

2. That a site of approximately 2·8 acres near to South Parks Road be allocated to the new School of Pathology.

3. That the warmest thanks of the University be conveyed to Sir William Dunn's trustees for their most munificent offer.

The unanimous decision of Congregation is the more gratifying in that the offer was entirely dependent on the provision of a suitable site, and that no part of the sum offered could be expended on the purchase of a site. The proposed site was selected, after careful consideration by a special committee of Council, as one fulfilling the required conditions, and interfering least with the amenities of the parks. It leaves the circuit of the parks untouched, and involves no destruction of trees or shrubs. The recent Royal Commission favoured the reservation of 15 acres in the parks, inclusive of the existing museum precincts and observatory, for the development of scientific departments. Should this recommendation be acted upon, the proposed new School of Pathology would form an integral part of that area. The actual buildings to be erected will not be large or lofty, and will occupy only a small portion of the proposed site, the remainder to be used as paddock for grazing purposes. It is now recognised that a portion of grazing land is almost a necessity for a properly equipped Institute of Pathology and Preventive Medicine. The greater part of the land allocated to the new School of Pathology will thus remain an open space. The fly-sheet setting out the position was signed by the President of Magdalen, the Warden of All Souls, the Provost of Worcester, and Sir Archibald Garrod, Sir Charles Sherrington, Prof. Georges Dreyer, Dr. E. W. Ainley Walker, and Mr. A. H. Johnson, Acting Curator of the University Parks, a representative collection of names which leave no doubt that the decision arrived at was a wise one.

If and when the offer of Sir William Dunn's trustees has received the consent of the Court of Chancery, the University will be provided with a magnificent "Sir William Dunn School of Pathology," as well as with an excellent School of Pharmacology, in place of the present inadequate provision for the latter subject.

Prof. Dreyer and Prof. J. A. Gunn are to be congratulated on the good fortune which has fallen to their departments.

Dr. A. A. Martin, T.D., has been appointed Supervisor of the War Pensions Clinic at Eastbourne.

Dr. James Andrews, who qualified in 1851 with the M.R.C.S. and L.S.A., and graduated M.D. at St. Andrews three years later, died at Hampstead on Nov. 18th, aged 92. He was an old Guy's Hospital man.

Notes, Short Comments, and Answers to Correspondents.

THE PRESENT STATUS OF RADIOLOGY.

An Address delivered at the opening of the New Radiological Department of the Manchester Royal Infirmary on Nov. 18th, 1922,

BY SIR HUMPHRY ROLLESTON, K.C.B., M.D. CAMB., D.C.L., LL.D.,

PRESIDENT OF THE ROYAL COLLEGE OF PHYSICIANS OF LONDON AND OF THE RONTGEN SOCIETY.

THE first feeling of your visitors is the desire to express admiration for the splendid X ray department which has now, by the well-directed generosity of Mr. Robert McDougall, who gave £5000 to equip the department in memory of his father, added to the efficiency of this great and famous hospital; while those who have come from a distance wish most cordially to thank the management of the hospital for their courtesy in giving them this opportunity of seeing what Manchester is doing to-day in one of the most progressive branches of the science and art of medicine.

When seeing the finished product it is natural to cast the mind back to the steps by which it has been built up; and it will therefore not be out of place to glance briefly at the history of the development of radiology in connexion with the Manchester Royal Infirmary. Discovered in 1895 by W. C. Roentgen, professor of physics in the University of Würzburg, the X rays were in the following year applied to medicine; but the progress of this handmaiden of medical art was slow at first and many technical difficulties had to be overcome; this is well shown by a glance at Dr. G. W. C. Kaye's recent book, "Practical Application of X Rays," in which there are two skiagrams of the hand for comparison, one taken in 1896 with an exposure of 20 minutes, which conveys comparatively little information, the other taken in 1921 by Dr. R. Knox with 1/100 second exposure which is like the bare skeleton. In recent years the advance has been rapid; but although Dr. C. H. Melland and Dr. W. E. Fothergill started work in the clinical laboratory of the old Royal Infirmary in 1901, the practical utility of X rays still appeared so problematical in 1904–1906 that no provision was planned for an X ray department adequate for the eventual requirements of this otherwise complete and model hospital. But in the year 1908, starting modestly in the basement of this building in one room measuring 18 feet by 15 feet, with a small dark room off it, Dr. A. E. Barclay gradually worked up and expanded the department into its present high state of development; the Royal Infirmary must indeed be congratulated on the patient enthusiasm of one who has done so much for its reputation by organising the department that now adorns it. His great work has been appropriately recognised by his appointment in 1918 as a member of the honorary staff.

It is most important that there should be the closest coöperation and communication between the workers in the wards on the one hand and those in the laboratories and radiological department on the other hand. Without such team-work and the resulting sympathetic insight into the mutual aims, difficulties, and limitations of these two classes of workers the progress of medicine must suffer and be delayed. Wisely recognising this essential condition for success, those responsible for the construction of this X ray department have provided a large demonstration room with a big X ray and screening apparatus, so that patients can be brought down and examined by the radiologist and the physician or surgeon and the attendant students. In addition a lantern is provided for the demonstration of slides from similar cases to that under discussion, so that light may be thrown on any unusual features in the cases. There will thus be available a collection of negatives and slides—comparable to a museum of pathological specimens—which will become more numerous and so more progressively valuable for teaching and research in medicine and surgery.

Correlation of Radiology and other Branches of Medicine.

Team-work between radiology and the other branches of medicine may be confidently expected to bear much fruit in research and the advancement of medical science, diagnosis, and treatment. In the case of the Manchester Royal Infirmary the omens in this respect are specially propitious, for not only has Dr. Barclay an international reputation, especially for work on the gastro-intestinal tract, but a generous benefactor who prefers to remain anonymous has provided £4000 for research in connexion with the intensive X ray treatment initiated at Erlangen, and a strong committee has been set up consisting of Sir William Milligan,

Prof. W. L. Bragg, Prof. H. R. Dean (now of Cambridge), Dr. C. Powell White, Dr. Barclay, Dr. A. Burrows (of the Manchester Radium Institute), and James Watt, junior; in May, 1921, Dr. C. C. Anderson was appointed research scholar and worked in Germany from July, 1921, to January, 1922. The combination of radiology and anatomy has greatly advanced our knowledge and efficiency in both these subjects; radiology has thrown a flood of new light on normal anatomy, especially of the abdomen; in this field of advance J. S. B. Stopford, professor of anatomy here, has been a pioneer, and it is most appropriate that Dr. J. M. W. Morison was in 1921 appointed lecturer in applied anatomy (radiology) in the University of Manchester. It is obvious that a knowledge of the normal X ray appearances and of their physiological variations is fundamental in the estimation of the morbid changes and in the detection of disease, and on this subject there still remains much to be done. Team-work with pathologists offers an attractive field for investigation; thus X ray examination of bodies before post-mortem examination, originally practised by Dr. F. H. Williams, of Boston, Mass., in 1906, and found to be of great value in the diagnosis of the thoracic complications of virulent influenza in 1918–19 (H. E. Robertson), is a perennial source of information. Possibly by combined investigations with pathological workers the severe reactions of a toxæmic nature that may follow intensive radiations and are a serious factor in the utilisation of the method may be found, as Aub and Witherbee's experimental work on rabbits suggests, to be preventable by increasing the resistance of the normal cells of the body by some procedure, such as the injection of horse serum.

Necessity for Increased Radiological Staffs.

The Manchester Medical School has a high reputation for teaching; radiology is now a subject in which every student must receive instruction and in which those who intend to take up this branch of the profession as their life's work can obtain special diplomas. With this organised equipment and personnel a complete course for a diploma in radiology, such as that now well established at Cambridge, will be carried out with every prospect of success. The art and science of radiology are of vigorous growth; the technique of obtaining good results has, as already mentioned, made prodigious strides, and the natural result of this is the vast increase in the demands now made on the radiological departments for diagnostic help in all branches of medicine. The science of radiology includes the interpretation of the appearance and the advancement of our knowledge by research, and it must now be recognised that the whole subject of radiology is rapidly expanding and advancing; just as pathology, in the past regarded as within the grasp of one man, is now divided into several departments, for the efficient management of which as many different men are essential, so in the near future will it be necessary to provide a University hospital with several radiologists, each specialising in a branch of the subject, such as the skeletal, thoracic, dental, gastro-intestinal, renal, and therapeutic aspects. This multiplication of workers and salaries—for the labourer is worthy of his hire, and this applies with the greatest force to the dangerous profession of radiologist—is no doubt a serious question for the managing boards of hospitals, especially in the present lean years. But it will have to be faced; in the past the increased expenditure entailed by the establishment of the now splendidly efficient nursing staff was agreed to, and is now tacitly accepted as in the natural order of things. If a similar provision is not made for X ray departments the efficiency of our radiological work and our position as compared with other nations in this respect will cease to be a cause of justifiable pride.

Private Consulting-rooms in Hospitals.

It is a matter of serious consideration whether it would not be an advantage for the private practice of radiologists to hospitals to be carried on in an annexe of the hospital X ray department. For much time and energy would thus be saved, and the radiologist being constantly on the spot would be available with the minimum of delay. This plan has been adopted and works well in several successful schools of medicine in America, and is now being discussed at one of the teaching hospitals in London. The suggestion that a member of the honorary staff should utilise the hospital premises for his private patients may seem not only revolutionary but wrong, because the hospitals are maintained for the poor who cannot pay. But a brief reflection reminds us that paying wards for in-patients, the attendant medical men receiving fees, have long been familiar; and it is not an alarming or extraordinary step from paying in-patients to paying out-patients; in many hospitals the visiting staff receive an honorarium, and in such instances this might be omitted as it would supply part or the whole of the rent which might reasonably be charged for private consulting-rooms. In other words, remuneration might well be made in kind instead of by honorarium.

A HANDBOOK FOR TEMPERANCE REFORMERS.

A LITTLE handbook, entitled the Alliance Year Book and Temperance Reformers' Handbook for 1922, which is edited by George B. Wilson, B.A., Political and Literary Secretary, United Kingdom Alliance (London: U.K. Alliance and Headley Brothers. Pp. 271. 2s.) contains a great quantity of information and discussion concerning the various aspects of the problem of alcohol, in the form of articles and statistics. In a foreword with the heading Liberty and Temperance Reform, reference is made to the limitations on individual freedom of action which are essential for communal life; the view of the Alliance is stated to be that the "use" and "abuse" of intoxicating drinks are so inextricably linked together that it is impossible by any process of regulation to render the drink traffic other than an injury to the community. Prof. E. L. Collis writing on the Effect of Alcohol on Industrial Efficiency deals with experimental and industrial evidence leading to the conclusions that alcohol (1) possesses energy which the body can use, but probably not for muscular work; (2) interferes adversely with reflex acts and neuro-muscular coördination; (3) exercises, when habitually consumed, an influence varying with the industry, time-keeping being most irregular when the habit is most pronounced; (4) increases industrial accidents, even though consumption is moderate; (5) is not found by any evidence to be advantageous to industrial efficiency, and is found by much evidence to be harmful; and (6) that prohibition in America appears to be associated with greatly improved industrial efficiency, whether the latter is measured by accident frequency, lost time, or output. Mr. Leif Jones contributes a reasoned reply to Sir Arthur Quiller-Couch's recent statement to the effect that total abstinence unfits a man for the creation or full appreciation of high literature. Mr. A. E. Blackburn deals with the recent prohibition (1919) of the importation of "trade spirits" into a large part of the Continent of Africa. Mr. Guy Hayler gives a brief survey, in "The Movement Towards a Dry World," of present conditions in Europe, the British Colonies, and Asia. A special chapter is devoted to the United States and the working of the Eighteenth Amendment and of the Volstead Enforcement Acts. Present-day legislation in this country is also set out, together with a series of statistical tables, a "temperance directory" and a list of liquor trade organisations. Reference is facilitated by a useful index.

COLONIAL HEALTH REPORTS.

Hong-Kong.

A REPORT prepared by the Colonial Secretary, the Hon. Claud Severn, C.M.G., LL.D., deals with the affairs of the Colony for the year 1920. The Chinese population is estimated at 634,150, and the non-Chinese civil community at 14,000, making a total civil population of 648,150. The birth-rate for the year (though this figure is stated to be wholly misleading, as it is impossible to register more than a portion of the births) was 3·96 per 1000 among the Chinese community and 21·9 per 1000 among the non-Chinese community, as compared with 3·9 and 20·6 for 1919. The death-rate was 22·78 per 1000 among the Chinese community and 17·9 among the non-Chinese civil community. The number of deaths from malaria (332) showed an increase on the previous year (319). The deaths of Chinese from this cause in the City of Victoria numbered 124 out of a population of 342,000, or a rate of 0·36 per 1000 per annum. Small-pox deaths numbered 21, all Chinese. There were 3834 deaths from respiratory diseases, other than pulmonary tuberculosis, as compared with 3049 in 1918, and 45 of these were among the non-Chinese community. Pulmonary tuberculosis claimed 1380 Chinese and 21 non-Chinese victims, whilst other forms of tuberculosis represent an additional 681 deaths, making a total of 2082, or 16·7 per cent. of the total deaths among the community. Beri-beri was responsible for 361 deaths, as compared with 555 during 1919 and 804 in 1918. During the past few years circulars have been distributed to all large employers of coolie labour calling their attention to the fact that beri-beri is produced by the consumption of white rice as the staple article of diet without a sufficiency of other foods, and advising that beans should be supplied with the rice when fresh meat or fresh fish cannot be afforded. Amongst other causes of death in 1920 were: influenza 542, typhoid fever 67, diphtheria 28, cerebro-spinal fever 103, dysentery 259, plague 120, cholera 6, syphilis 431, cancer 81, pneumonia 2179, heart diseases 184, enteritis and gastro-enteritis 514, nephritis 287.

Weihaiwei.

This territory is situated on the north-east coast of the Shantung peninsula, in latitude 37·30 N., longitude 122·10 E., and, previous to its lease to Great Britain by China in 1898, formed a part of the Chinese Province of Shantung. The total area is 288 square miles, and

it comprises a belt of land on the mainland 10 miles wide, with a coast line of 72 miles, containing the small town of Port Edward (which is the only port and the seat of Government) and some 320 villages, together with the small island of Liu Kung, on which is situated the Royal Naval Dockyard. At the decennial census in 1921 the native population was found to be 154,416, while the foreign population was 246. Among the Chinese there were 80,953 males to 73,463 females, in spite of a fairly large emigration of the former to Manchuria. The registration of Chinese births, deaths, and marriages is not compulsory and no figures are available. During 1921, among the foreign population, there were 1 birth, 3 deaths and 3 marriages. The census revealed the fact that the number of infants under 5 years of age was 17,859 and the number of adults over 70 5418, of whom 20 were over 90. The general health conditions of Europeans was good. Of the 3 deaths only 1 was of an infectious disease (dysentery). There was one other case of acute dysentery among visitors, and 1 case of scarlet fever in a resident. During the summer on the island of Liu Kung there were a few cases of septic throats. The health of the native population was equally good. A mild outbreak of influenza occurred in May, 1921, when 56 cases were seen; two of these were treated in hospital and both recovered. The only other cases of infectious diseases noted were 6 of enteric fever, 4 of erysipelas, and 32 of mumps. Of 6794 vaccinations, 98·8 per cent. were successful. There is no European civil hospital in the territory and the need is urgent, especially during the summer months, when the hotels are full of visitors with their children. There are three native civil hospitals, with accommodation in the aggregate for 57 patients. Considerable sanitary improvements have been effected, and the conditions have for years past excited the favourable comment of visitors. The climate of Weihaiwei is without superior on the China coast, and, taken the whole year round, can have few superiors in the world. The winds which are prevalent in the spring are sometimes unpleasant; and the cold from mid-December until mid-March, with an insufficient snowfall for winter sports, is not inviting, but neither heat nor cold are ever excessive; the air is dry and bracing, rainy days are few, and sunshine is a normal condition. The weather from mid-September until mid-December is almost perfect. In 1921 there were 271 days of sunshine.

CALCULATING PRODIGIES.

To the Editor of THE LANCET.

SIR,—Will you allow me to add a few comments to your article, reviewing "Calculating Prodigies," by Mr. V. Numair in THE LANCET of Nov. 18th (p. 1099). This author's suggestion that calculating boys owe their powers mainly to early environment cannot be correct, for there are numerous cases on record of imbeciles confined in institutions from infancy who, though the faculty of number is usually on a par with the lack of general intelligence in the mentally deficient, yet showed extraordinary abilities in this direction.

For example, Dr. Desruelles, of the Asylum of Armentières, published in *L'Encéphale*, 1912, a very interesting and valuable description of phenomenal ability in arithmetical calculation associated with general mental inferiority in a boy, of the name of Fleury, blind from birth owing to ophthalmia neonatorum and therefore without visual memory. He had never been teachable in any way, having always proved very refractory and difficult to manage. The only thing he learned was the Braille system, but his capacity for reading remained poor. All of Fleury's calculations were mental; he did not repeat figures with his lips. Here are some examples: he multiplied 825 by 825 in four seconds; given a day of the week in 1912, he calculated May 22nd, 1908, as a Friday in five seconds; asked how many seconds in 39 years, 3 months, and 12 hours, he gave the correct answer, 1,238,587,200 in one minute and fifteen seconds. A. Wizel [1] describes a similar phenomenal talent in an imbecile girl suffering from epilepsy. She could not tell how old she was, or how many brothers and sisters she had; she could not read or write, could not read figures, and could only talk on childish subjects; but she had a remarkable faculty for arithmetic, being especially good at multiplication and division.

That there must be an anatomically distinct brain centre for the formation and expression of figures is shown also by the numerous cases of aphasia recorded, in which the calculating ability and expression of figures were retained. Further, a patient may be wordblind and yet be able to calculate and read figures. Perhaps the most instructive case was described by Dr. James Hinshelwood,[2] of a teacher of languages who was unable to read even the largest letters of the test types. He could see them but did not know what they were. Yet he could read at once the number standing at the top of each paragraph and even the smaller figures of the test types; indeed, he could read any number of figures quite fluently.

One more fact against the assumption of the influence of the environment is that the great calculators showed precocity for figures at 3 years of age, some at 6, and most of them before 10 years of age. Mathematicians are not necessarily distinguished rapid arithmeticians. Capacity for mathematics is a complex ability, but arithmetical capacity appears to be a rudimentary one.

I am, Sir, yours faithfully,

BERNARD HOLLANDER.

Wimpole-street, W., Nov. 18th, 1922.

[1] Archiv für Psychiatrie, 1904.
[2] THE LANCET, 1895, ii., 1564.

A DIRECTORY OF NON-RESIDENT NURSES.

IT is the experience of many practitioners that when a resident nurse is refused by a patient or his friends the offer of a visiting nurse is often gratefully accepted. In THE LANCET of Feb. 11th, 1922, we entered a plea for a comprehensive list of visiting nurses available for private work, since the housing shortage and domestic difficulties make it inconvenient for the middle-class family to provide suitable accommodation and service for a resident nurse. In response to this demand the Scientific Press, Ltd., have now prepared for the convenience of the medical profession the Visiting Nurses' Directory, consisting of 114 pages, of which every alternate page is left blank for additional names. The address and telephone number of the nurse, whether she is "general trained" or specialises in fevers, midwifery, and so forth, is noted. Those working in London are classified under the heading of the suburb or district in which they reside. Kensington leads the way with 17 names, Westminster has 16, Marylebone 14, and Hampstead 11, while many other districts are hardly less well served. Inasmuch as some practising maternity nurses are presumably included in those stated as "general trained," it is not clear that all of these are available for general work. The second part of the directory deals with visiting nurses in provincial towns, in Scotland, and in Wales. The price of this directory, which should be of great assistance as a connecting link between visiting nurses and medical men, is 9*d*. It is obtainable from the Scientific Press, Ltd., 28, Southampton-street, Strand, London, W.C., and will be sent free to doctors in every neighbourhood in which a visiting nurse resides.

AN UNSUCCESSFUL STEINACH OPERATION.

IN the *Wiener klinische Wochenschrift* Prof. M. Zeissl sets out with praiseworthy candour the details of an operation on his own person which seems to him to disprove Steinach's claims; in fact, he heads his article "Wann und wie ich ohne Erfolg gesteinacht wurde." Prof. Zeissl is now 69 years of age. Three years ago he began to suffer from hypertrophy of the prostate, and sought the advice of the late Prof. Zuckerkandl. As he was much below his normal weight on account of severe intestinal catarrh he was advised by Zuckerkandl not to undergo prostatectomy, but to be content with antiseptic bladder irrigation. After three years of a "stuffing" cure, which increased his weight 23 kilos, he was growing tired of catheter life and was suffering from bilateral epididymitis. Being still advised against radical operation, he, at his own suggestion, impressed by the work of Prof. Haberer, submitted to section of both vasa deferentia, an operation which was performed in the Rothschild Hospital by an assistant of Zuckerkandl. The operation was sucessfully carried out, but produced no diminution in size of the prostate nor any improvement in spontaneous micturition. Prof. Zeissl admits that section of the vas is not identical with Steinach's ligature, but assumes that the result as regards rejuvenation must be the same in the one case as in the other. Far from becoming more active sexually, spontaneous erections became seldomer after operation, while mentally and physically he noticed no alteration in his condition. He continues to write and to lecture as before.

THE HEALTH OF THE NAVY IN 1915.

IN our review of a statistical report, which appeared in THE LANCET of Nov. 11th, it was stated that dysentery caused 951 cases with 54 deaths, with the remark, "emetine treatment of *bacillary* dysentery gave 'excellent results.'" This should, of course, have read *amœbic* dysentery, and we regret a slip which was, we trust, too obvious to mislead. We have reason to believe that the next report is to be very much accelerated in appearance.